DOCUMENT RESUME

ED 195 982 CS 005 800

TITLE Hawaii Educational Assessment Reading Report.
INSTITUTION Hawaii State Dept. of Education, Honolulu.
PUB DATE May 78
NOTE 178p.

EDRS PRICE MF01/PC08 Plus Postage.
DESCRIPTORS *Educational Assessment; Elementary Secondary Education; Grade 4; Grade 8; Grade 11; Minimum Competencies; *Performance Factors; *Program Effectiveness; *Reading Achievement; *State Programs
IDENTIFIERS *Hawaii

ABSTRACT

An analysis of the assessment results and general findings of a statewide assessment in reading conducted in Hawaii in 1975 is presented in this report. Chapters provide a perspective on the assessment program, the preparation of the statewide assessment, the methodology used, the procedures for data analysis, and the results and findings of students' reading performance in grades 4, 8, and 11 by seven performance indicators: (1) understands the meanings of words, word phrases, and word relationships; (2) demonstrates a positive attitude toward reading; (3) locates and uses reading resources effectively; (4) follows written directions; (5) gets the main idea and supportive details from a selection; (6) demonstrates that the student can read a variety of materials for various purposes; and (7) demonstrates that the student can read critically. Appendixes provide assessment item numbers by performance indicators and grade level; a language, experience and thinking model; criteria for analysis; the percentage of items below 50%; a summary of the utilization of assessment items; a summary of LET and content prerequisites; and identical items used in all three grade levels by indicator. (HCD)

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HAWAII EDUCATIONAL ASSESSMENT READING REPORT

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PREFACE

In 1975, a statewide assessment was conducted in reading. This assessment was part of an effort to determine whether or not Hawaii's students are achieving the Foundation Program Objectives.

In general, the findings are encouraging. The assessment results indicate that Hawaii's students are satisfactorily meeting the reading objectives. There are, however, areas of weakness in their reading performance. Improvement needs seem to center around the application of reading in the content areas and the student's ability to do analytical thinking in relation to reading. Since reading is related so closely to thinking, it follows that, in order to enable students to reach their potentials in reading, the schools must foster a learning climate in which thinking becomes an all-pervasive concern.

This report presents the analysis of the assessment results and general findings. The intent is to provide schools with information which will be helpful in improving the reading curriculum. It goes without saying that in order to improve the reading curriculum, a variety of information must be considered. This assessment report represents but one possible source of data for schools to consider in identifying areas for improvement in reading.

Charles G. Clark
Superintendent

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Chapter 1. A Perspective on Hawaii's Statewide Assessment in Reading

I. The Foundation Program and Objectives

The Statewide reading assessment was undertaken as a part of the management function within the Department's Foundation Program. The Foundation Program includes a flexible learning program for students which consists of (1) the Academic Program, (2) the Counseling Services and Guidance Program, (3) the Student Activities Program and Services and (4) the Administrative and Support Services Program.

The Academic Program

The purpose of the Academic Program is to equip each student with the knowledge, skills, attitudes, and values which one needs to live responsibly.

The Academic Program encompasses existing subject areas such as language arts, mathematics, physical education, science, health, social studies, art, music, foreign languages, agriculture, industrial-technical, industrial arts, home economics, and business-distributive education. Cutting across subject areas are thematic concerns such as Career, Environmental, and Values Education.

The Academic Program is person-centered and activity-oriented, with the needs of all students accommodated.

The Counseling Services and Guidance Program

The purposes of the Counseling Services and Guidance Program are (1) to assist the student in making self-directed and responsible decisions affecting the student's life, (2) to facilitate the development of student competencies in coping with personal and social demands, (3) to prevent the emergence of conditions and problems which may interfere with the student's full development, and (4) to provide remediation, as necessary, in order to minimize or correct the effects of handicapping conditions.

This portion of the Foundation Program includes planned individual and group guidance activities, as well as counseling services by professional school counselors for special needs of students who require individual help.

The Student Activities Program and Services

The purpose of the Student Activities Program and Services is to meet school-related interests and needs of students which

cannot always be met in the regular classroom situation. The program provides a laboratory of activities for students which will enable them to: (1) learn how to serve as leaders and followers, (2) develop personal interests and talents, (3) develop personal and social relationships, and (4) develop as participating citizens in the total school, community, state, national, and world affairs.

The Student Activities Program and Services is that portion of the K-12 Curriculum which is normally beyond the regular class schedule. Each school strives to provide a range of activities according to student needs and available resources.

The Administrative and Support Services Program

The purpose of the Administrative and Support Services Program is to provide for a sound learning and teaching atmosphere in schools.

This is achieved through the allotment of material resources and certificated, classified, and para-professional personnel to schools. In addition, the program includes a range of auxiliary services such as school lunch, transportation, safety, custodial, clerical, repairs and maintenance, and community relations services.

Foundation Program Objectives

In 1974, the objectives of the Foundation Program were further elaborated and clarified in a publication entitled Foundation Program Objectives for the Hawaii State Department of Education. The Foundation Program objectives are as follows:

Objective 1: Develop Basic Skills for Learning and Effective Communication with Others

Objective 2: Develop Positive Self-Concept

Objective 3: Develop Decision-Making and Problem Solving Skills at the Student's Proficiency Level

Objective 4: Develop Independence in Learning

Objective 5: Develop Physical and Emotional Health

Objective 6: Recognize and Pursue Career Development as an Integral Part of the Student's Total Growth and Development

Objective 7: Develop a Continually Growing Philosophy Such that the Student is Responsible to Himself or Herself as well as to Others

Objective 8: Develop Creative Potential and Aesthetic Sensitivity

Each of these objectives pertains to a broad area of human development. In totality, the objectives specify the eight perspectives through which the effectiveness of the Foundation Program can be gauged.

II. The Foundation Program Assessment and Improvement System (FPAIS)

Commonly referred to as FPAIS, the Foundation Program Assessment and Improvement System is the Department of Education's curriculum management system. FPAIS is envisioned as being a comprehensive system for curriculum management within the Department through which coordination of the various instructional, activity, and service programs may be realized and facilitated.

FPAIS consists of an Assessment Component and an Improvement Component, and has as its primary purpose the improvement of instruction for students through systematic improvements in the Foundation Program.

The design of FPAIS provides for a broad range of activities for assessing students and reviewing programs, so that knowledgeable judgments may be made on the extent to which the Foundation Program objectives are being attained. The design is sufficiently flexible to allow the School, District, and State levels to exercise initiative in carrying out assessments and program improvement activities.

III. Outline of This Report

This report consists of the following parts:

Chapter 1 provides a general overview on the reading assessment by discussing the Foundation Program, the Foundation Program Objectives, and the Foundation Program Assessment and Improvement System (FPAIS). These are discussed briefly because they provide the context for the reading assessment, which was conducted within the instructional setting of the Foundation Program and the management framework of the Foundation Program Assessment and Improvement System.

Chapter 2 discusses the administration of the reading assessment. It includes a discussion of critical activities conducted in preparation for the assessment, the methodology of the reading assessment, and procedures for data analysis. In addition, the chapter includes a general summary of the reading data.

Chapter 3 reports on the reading data from the perspective of programmatic concerns in reading. The results and program improvement recommendations are presented for each Performance Indicator for each of the grades assessed (grades 4, 8, 11).

Chapter 2. Administration of the Statewide Assessment in Reading

I. Preparation of the Statewide Reading Assessment

A. Purpose of the Statewide Assessment in Reading

The reading assessment was conducted as one among several areas to be undertaken to determine the extent to which the 8 Foundation Program objectives are being achieved by students. The reading assessment relates to the sub-objective, "Uses reading and listening to gain information and knowledge, to understand self and others, and to derive enjoyment." This sub-objective, in turn, relates to Foundation Program Objective 1: "Develop Basic Skills for Learning and Effective Communication with Others." For the initial assessment, it was decided to focus on reading only rather than to include listening.

The decision to conduct a statewide assessment in reading involved all of the districts, and reflects the high priority placed on this area of the school curriculum. In preparing for the assessment, a number of activities were planned and implemented. These cover the general areas of development of objectives and exercises based on the objectives, preparation of materials, and administration of the statewide assessment. A fuller discussion of these activities follows.

B. Development of Objectives, Sub-Objectives, and Performance Indicators

The Foundation Program objectives were initially approved by the Board of Education in 1970. In 1974, these objectives were developed further and updated. A statewide public survey was also conducted to validate the objectives with the community.

There are 8 broad objectives for the Foundation Program. These objectives have been made more specific through the delineation of sub-objectives. Foundation Program sub-objectives are statements of anticipated outcomes that serve as a breakdown of the eight overall objectives. For the purpose of assessment, the Foundation Program sub-objectives have in turn been clarified through the development of Performance Indicators. A Performance Indicator is a behavioral descriptor which represents an expected learning for a special target group of students identifiable by such characteristics as age, grade level, sex, and so on. The particular function of a Performance Indicator is to serve as the basis for constructing assessment exercises (test items).

State program specialists, District curriculum specialists, and School administrators and teachers were all involved in the updating of objectives. Eleventh grade students, parents, teachers, businessmen, District School Advisory Councils, Board of Education members, and local university faculty members were involved in the 1973-74 public validation of the objectives.

C. Preparation of Exercises

The Northwest Regional Educational Laboratory, research and development agency located in Portland, Oregon, was contracted by the Department to make a search for appropriate reading assessment exercises. At the same time, Hawaii teachers were involved in the development of items to be administered individually. These are applied performance type of items.

University and Department of Education specialists and local lay citizens were involved in the review of the exercises developed and selected for trial testing. Based on trial test results, the exercises were refined, modified and rearranged as necessary for full-scale assessment.

A final review of the assessment packages was conducted involving reading experts, teachers, and lay citizens. Final refinement of the exercises was completed based on the last review.

A requirement of exercise preparation was to have packages of exercises represent various levels of difficulty. The range included an expected response rate of over 75 percent correct responses to an expected rate of less than 25 percent correct responses. This requirement was based on the need to describe a broad spectrum of educational attainments achieved by the students in the target population.

Another guideline was to have exercises that could be administered at two or more grade levels. The guideline is based on the assumption that useful comparisons can be made between grade levels.

As part of the exercise preparation process, preliminary tryouts and field-testing were conducted to furnish information about exercise clarity and administrative feasibility, to provide additional sample responses for open-ended exercises, to provide data for improvement of scoring guides, and to provide information to assist in making final exercise selections, revisions, and placements within the various packages.

Generally, the reading assessment exercises were developed for group as well as individual administration.

Group-administered exercises included both multiple-choice and open-ended types (which were individually scored according

to pre-determined scoring criteria). To minimize guessing, all the exercises provided for a response category of "I don't know."

Individually-administered exercises were used to measure performances which could be directly assessed through one-to-one administration, using applied performance techniques and procedures (which provide for respondents' manipulations of visuals and materials for problem-solving in addition to verbal responses). Asking students to demonstrate whether they can trace their movements on a labeled city map or the basis of written directions read independently by them is an example of this type of item.

Attitude survey questions and affective exercises were included in each set of assessment materials. The attitudinal responses were used to indicate the total group's attitude.

Exercises were provided so that they covered the entire spectrum of difficulty, from very easy tasks to the most difficult. An attempt was made to obtain an almost equal collection of easy, medium, and difficult exercises.

D. Preparation of Materials

Before the data collection for the statewide reading assessment in reading began, materials were prepared for use in the field. Exercises selected for inclusion in the assessment were grouped into booklets called "packages" and printed. Exercise administrators were trained and scheduled for assessment in the various schools.

In preparation for the reading assessment, the staff of Northwest Regional Educational Laboratory compiled most of the group-administered exercises. Hawaii's project staff compiled some of the group-administered exercises with consultation from reading specialists. A selected group of Hawaii teachers developed the individually-administered exercises. The Reprograhics Section staff of the Department of Education assisted in obtaining contractual services for printing and distribution of the assessment packages.

Since individuals of different ages were to receive somewhat different sets of exercices, packaging was done separately for each grade level in the assessment. Packages were compiled for each grade level according to the following criteria:

1. Each package contained about 45 minutes of exercise time. An additional 15 minutes of administration time was allowed for introductory statement, instructions, and completion of personal background questions. Each student was limited to taking only one package of assessment exercises.

2. Performance indicators were represented in the packages evenly. Attitudinal exercises were, however, represented in only one of the four group-administered packages.

3. Each package contained exercises from the three levels of difficulty (easy, medium, and difficult).

4. There were two packages of individual exercises for each grade level and four packages of group exercises.

5. Exercises were not duplicated among any of the packages at any single grade level.

Some exercises were designed to be administered to an individual at a time in a face-to-face situation. Most exercises, however, were designed to be completed by respondents on their own as they read the questions.

The respondents filled an oval for each selected answer on a computer answer sheet. Since respondents worked these group-administered exercises on their own, at least 12 students at a time could be assessed.

Each student's responses, including personal background information, were marked on a single computer coded answer sheet for machine processing.

Most of the individually-administered exercises required the preparation of additional stimulus materials, such as maps, illustrated cards, newspapers, encyclopedias, dictionaries, and so on. Open-ended responses were recorded by the examiner who coded the responses as given by the student.

Examiners were hired and trained on how to administer the packages. The trial assessment was conducted in the fall of school 1974-75. The statewide assessment occurred during the spring.

E. Administration of the Assessment

All school districts were notified by the Superintendent's office regarding the statewide assessment. Schools selected for the assessment were requested to participate.

Schedules on the date, place, and time for students participating in both the group and individual assessments were distributed to the schools. Fourth graders were notified by their teachers about their schedule. Individual schedule notices were sent to each student in the eighth and eleventh grades. Classroom space was provided at each school for assessment use.

The examiners and assessment staff were responsible for administering the test packages and checking completed answer sheets for proper coding and erasures.

II. The Methodology of the Statewide Reading Assessment

The methodology for the National Assessment of Educational Progress (NAEP) was used for Hawaii's statewide reading assessment. This methodology influenced the selection of target groups for the reading assessment, the sampling design, and the sampling size.

A. Target Groups

The participants were students sampled from grades 4, 8 and 11. Students from these three grade levels were selected because it was thought that these grades represent educational milestones attained by most students: grade 4, when students have completed at least three years of some basic programs of primary education; grade 8, when students have completed their elementary education and are in the junior high school; and grade 11, when students are in high school completing their education but still have an additional year of schooling to benefit from remediation should the statewide assessment indicate that this provision is necessary.

B. Sampling and Design Specifications

Because of limited material resources and conditions such as finances, time, resources of data collection, scoring and policy, Hawaii's statewide reading assessment was conducted on a sampling basis. The design specifications focused on the target populations of grade 4, 8, and 11 students enrolled in Hawaii's public schools. Students who were non-English speaking or handicapped in such a way that they could not respond to the exercises as administered were excluded.

At each grade level, the sample of each package of exercises was designed to meet the following specifications:

1. Adequate representation of the sub-populations to allow estimation of the desired proportions with an acceptable level of precision;

2. Representation by an adequate sample size for each of the seven districts to provide generalizable data for each district.

The following policy guidelines were considered in the development of sample designs: (1) not to take more than one class period of a student's time, (2) the demands on school personnel were to be minimized, and (3) the number of students assessed in any one session was to be limited to 12-20 for grade 4 and 20-30 for grades 8 and 11.

Other important sampling considerations were:

1. All the group-administered packages were to be administered in every school within every district;

2. The respondents taking each package were to be a probability subsample of each district's total grade level sample group.

C. Sample Design for Group-Administered Exercises

To obtain adequate generalizable data for each district, all schools in each district were included in the sample of schools. Within each school, a proportional simple random sample of students was selected and assessed. However. it was necessary in a few cases to cluster some of the schools that had such limited enrollment size that fewer than 9-12 students would have been selected for testing. Clustering was determined by socioeconomic levels of low, middle, and high or middle-plus. A representative school for each cluster was then randomly selected.

Multiple assessment packages for each grade level were administered on a multiple matrix sampling basis. (The assessment packages were randomly assigned to students, but the exercises within the packages/booklets were not randomly placed in the individual booklets due to the constraint of placing the exercises by the criteria of difficulty level and format; therefore the procedures used do not represent a pure multiple matrix sampling method.)

D. Sample Design for Individually-Administered Exercises

For each of the grade levels assessed, sample schools were selected to represent a simple random sample for the purpose of obtaining state generalizable data only. Costly one-to-one assessment (one student per examiner per session) made it necessary to limit assessment to a minimum size sample for each grade level.

E. Sample Sizes

The size of a sample required for estimating baseline performance and change over time is related to the type of administration, the minimum change to be detected with a given degree of confidence, the desired power, and sample design, operational procedures, time, and cost.

In accounting for such factors, sample size per session for grade 4 administration was limited to about 12-20; about 20-30 for grade 8 and 11 administration. The total state sample size for group-administered packages was planned to include 19,378 students; for individually-administered packages, 1,800 students.

One problem recognized in planning the sample sizes for each district was the reduction in sample size due to absenteeism at the time of assessment. Therefore, alternate students were randomly pre-selected to replace any of the initial group of students who were absent.

F. Summary of Response

A summary of responses is presented by package letters and grade levels for group-administered exercises and individually-administered exercises. The following tables provide the summary of responses. Exhibit A represents group-administered exercises; individually-administered exercises are represented in Exhibit B.

OBSERVED SAMPLE SIZE
(FOR GROUP-ADMINISTERED EXERCISES)
EXHIBIT A

PACKAGE LETTER	GRADE LEVEL		
	4	8	11
A	1,571	1,604	1,403
B	1,564	1,565	1,389
C	1,542	1,550	1,355
D	1,505	1,561	1,340
TOTAL RESPONDENTS	6,182	6,280	5,487

TOTAL NUMBER OF RESPONDENTS AT ALL GRADE LEVELS: 17,949

OBSERVED SAMPLE SIZE
(FOR INDIVIDUALLY-ADMINISTERED EXERCISES
EXHIBIT B

PACKAGE LETTER	GRADE LEVEL		
	4	8	11
E	294	299	303
F	299	291	298
TOTAL RESPONDENTS	593	590	601

TOTAL NUMBER OF RESPONDENTS AT ALL GRADE LEVELS: 1,784

Exhibit C which follows presents the average sample size for each of the reporting groups. Additional reporting groups had been planned for, but those that were found to be under-represented were not included for data analysis and therefore are not listed in Exhibit C.

TOTAL NUMBER OF RESPONSES BY REPORTING GROUP AND TYPE OF ADMINISTRATION AT EACH GRADE LEVEL, 1974-75

EXHIBIT C

REPORTING GROUP	GRADE LEVEL 4 GROUP ADMINISTERED	4 INDIVIDUALLY ADMINISTERED	8 GROUP ADMINISTERED	8 INDIVIDUALLY ADMINISTERED	11 GROUP ADMINISTERED	11 INDIVIDUALLY ADMINISTERED
STATE	6,182	593	6,280	590	5,487	601
DISTRICT						
HONOLULU	1,033	155	1,020	155	975	188
CENTRAL	1,000	118	945	111	851	102
LEEWARD	1,032	125	970	111	806	94
WINDWARD	952	78	938	82	857	84
HAWAII	945	60	924	61	882	61
MAUI	754	33	939	46	662	42
KAUAI	466	24	544	24	454	30
SEX						
MALE	3,133	305	3,226	304	2,673	297
FEMALE	3,069	288	3,054	286	2,814	304

III. Procedures for Data Analysis

The plans for analyzing the results of Hawaii's statewide reading assessment call for estimates of the percentages of individuals at each of the three grade levels in the state as a whole and in certain groups who possess various knowledges, understandings, skills, and attitudes in reading.

The plans were basically patterned after the National Assessment of Educational Progress (NAEP) which reports results in terms of percentage value or p-value.

The most frequently reported p-values are those that estimate the percentage of a total grade level population or a certain subpopulation that gave an acceptable response to an exercise. However, many p-values in addition to the percentage of acceptable responses were computed. For multiple-choice exercises, percentages were computed for each unacceptable choice, the "I don't know" response and the total percentage of the unacceptable responses as well.

Not all exercises had clearly definable acceptable and unacceptable criteria; for example, some were survey questions on interest in reading generally and in specific areas or subjects.

Some of the exercises had several parts or required individuals to give more than one response, each of which could be scored acceptable/unacceptable. On these multi-part exercises, the percentage of individuals giving exactly zero, one, two, three, etc. acceptable responses are reported as well as the percentage of individuals giving at least one, at least two, at least three, and so on, acceptable responses.

A. Computation of P-Values

The percentages reported at the state level are weighted estimates of population percentages. The procedures for developing the estimators and their standard errors are related to the sample design.

Since the sample was designed and selected so that district level reporting would be possible, some of the districts are overrepresented in the state sample and others are underrepresented. Thus, the state sample is <u>not</u> self-weighting, and each sampled student's item response was weighted.

B. Limitations of the Data and Constraints

The assessment which is the subject of this report represents an initial attempt to assess the sub-objective on reading which is part of Foundation Program Objective #1 on Basic Skills. Therefore, the reading assessment is presently considered to be somewhat experimental and developmental in nature. As additional assessments are conducted and greater

experience and new insights are gained, it is expected that further refinements of developmental activities will take place which will correct whatever problems or weakness may be reflected in this initial assessment in reading.

The reading assessment currently reflects the following limitations and constraints:

1. As an initial effort, the reading assessment provides baseline data primarily. Before trends are discernible, it will be necessary to conduct additional assessments in reading.

2. The sampling design used enables only State and District profiles to be drawn. Due to limited funds the sample size used could not be large enough to allow for generalization at the school level.

3. The instrument used for the reading assessment is still in need of additional refinements and improvements. It is necessary to revise it further to achieve a closer fit between test items and Performance Indicators, to allow for comparisons between Performance Indicators, to allow for more meaningful comparisons between grade levels within Performance Indicators, and to improve the overall quality of the test items used in general.

4. The knowledge and techniques available for explaining the causes of educational achievement or lack of achievement are still in their infancy. Therefore, in going through the report, the reader must exercise great caution in speculating about probable causes when the data shows that a group's overall level of achievement is either above or below the State score. Consider, as an example, a group whose achievement may be well above the State performance level. Most individuals within the group in question may attend schools that have excellent physical facilities and high-quality faculties, may have well-educated parents and come from homes with a wealth of reading materials available. Any of these variables could contribute to the group's high achievement, while membership in the group itself may contribute very little or nothing. When one looks at the data for a given group, therefore, it cannot be said that differences in achievement between the group and the State as a whole is attributable solely to membership in the group. Interpretation of results must take into account the other factors which may be influencing the achievement of the group.

5. The data analyses procedures were based on two assumptions: (a) all public schools in each district would be included in the sample; (b) within each school, a

proportional simple random sample of students would be selected and assessed. Because these assumptions were not fully met, it cannot be predicted at this time what the effects are on the values of the computed percentages and on their standard errors.*

6. The adequacy and relevancy of the grade 11 samples are in doubt. This doubt is based on (a) the heavy use of alternates which raises questions on sample representativeness, and (b) in three districts, the actual sample size is less than that desired. The extent of an adverse effect on the precision of the estimates reported for these districts is not known and cannot now be determined.**

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* A Review of the Assessment Component of the Hawaiian Foundation Program Assessment and Improvement System, W. Todd Rogers (University of British Columbia) and J. Stanley Ahmann (Iowa State University) April, 1977, p. 28

** Ibid., p. 22

Chapter 3. Results and Findings of Students' Reading Performance in Grades 4, 8 and 11 by Performance Indicators

I. Overview

The Hawaii reading assessment focused on the sub-objective pertaining to reading which is, in turn, an aspect of the Foundation Program Objective 1 on Basic Skills for Learning and Effective Communication. The thrust of the reading sub-objective is on the student's ability to use reading to gain information and knowledge, to understand the self and others, and to derive enjoyment.

In preparing for the reading assessment, the decision was made to delimit the assessment essentially to the student's ability to comprehend and to apply reading skills to accomplish selected tasks in reading which require synthesis of many discrete reading skills. Therefore, word recognition skills which tend to be stressed in reading programs, especially in the elementary grades, were generally not tested. This decision was based on the assumption that such areas of the curriculum as word recognition skills can be more adequately assessed by teachers at the individual classroom level, as an integral part of the ongoing diagnosis-prescription model used to teach reading.

This assessment in reading attempts to measure reading performance of students in grades 4, 8, and 11 within the framework of seven areas of performance, referred to as Performance Indicators. The Performance Indicators are as follows:

Performance Indicator 1.	Understanding meanings of words, word phrases, and word relationships.
Performance Indicator 2.	Demonstrating a positive attitude toward reading; reading a variety of materials for various purposes.
Performance Indicator 3.	Locating and using reading resources effectively.
Performance Indicator 4.	Following written directions.
Performance Indicator 5.	Getting the main idea and supportive details from a selection.
Performance Indicator 6.	Demonstrating that he/she can read a variety of materials (graphs, tables, charts) for various purposes.
Performance Indicator 7.	Demonstrating that he/she can read critically.

These Performance Indicators are discussed more fully in the next section.

A. Description of Performance Indicators

Performance Indicator 1

This indicator measures the student's ability to understand meanings of words, phrases and word relationships. This aspect of reading relies heavily on the semantics (meanings) and the syntactical (sentence structure) aspects of language. These represent the meaning bearing part of language and reading which is important to comprehension. Some reading programs rely heavily on this type of knowledge as prerequisites, while others rely on it somewhat and few not at all. Different programs may emphasize it at different times in the curriculum sequence.

Performance Indicator 2

This indicator measures the student's attitude toward reading. Developing positive attitudes toward reading is an important anticipated outcome for most reading programs.

Performance Indicator 3

This indicator measures the student's knowledge of a variety of information sources, including newspapers, television guides, encyclopedias, and other reference materials. In addition, it includes the skills necessary to make effective use of reference materials, such as the ability to alphabetize. The types of knowledge and skills reflected in this Performance Indicator tend to appear frequently among the instructional objectives of most reading programs.

Performance Indicator 4

This indicator measures the student's ability to read and follow directions. This is a special type of reading task which represents what is generally called a regulatory function of language--that of giving and receiving of directions and instructions. The indicator emphasizes particular skills which pertain especially to literal comprehension and the processing of ideas or information in sequential order.

Performance Indicator 5

This indicator measures thinking processes which pertain to the synthesis of discrete ideas into larger generalizations or concepts. Included are the ability to recall and recognize details; perceive patterns or structures among the details; identify topic sentences; and infer main ideas. These aspects of reading are important because they allow the reader to relate the myriad details and words of a passage to larger concepts, a

process which facilitates continuity and retention of what is read, particularly in regard to longer reading selections.

Performance Indicator 6

This indicator measures the student's ability to use and read a variety of printed materials. This aspect of reading represents the application of literal comprehension skills to printed matter which a person usually encounters in daily life activities.

Performance Indicator 7

This indicator measures reading skills which relate to higher mental processes than simple recall. These include the reader's ability to analyze, interpret and evaluate what is read, as well as to perceive relationships and to read and use the information in the text.

The ability to read critically is a major outcome expected of reading programs, especially at the secondary level.

For each of these Performance Indicators, the variety of skills or competencies assumed to be represented by the respective indicators were identified. These are displayed in Appendix F of this report.

Because program improvement in schools is the ultimate goal of assessment, what is actually measured through a test is of critical importance. In order to assist schools in understanding the linkage between Hawaii's assessment data and the school curriculum, the content and processes reflected in the assessment items were analyzed in preparation for this report. The analysis was based on an abstract model reflecting the interactions of three dimensions which are critical to reading comprehension. These are language, experience and thinking (LET).

This LET model views comprehension as a result of the dynamic interactions of the language, experience and thinking dimensions in the reader. The language dimension includes the sounds, vocabulary and sentence structures of a reading passage. The experience dimension refers to the knowledge which the reader has acquired from past experiences. The thinking dimension relates to the processing of new information or the analysis of known ideas or elements.

It is believed that the LET model used in preparing this report provides a useful framework for the analysis of reading data because it relates the students' performance on test items to larger areas of concern in improving reading instruction, rather than to minute reading skills. Such a perspective, it is assumed, will foster a situation whereby the instructional focus will be on the adjustment or modification of factors affecting the language-thinking processes in students, rather than on utilization of skill materials as such.

The analysis of test items reveals that, in regard to the language dimension, the emphasis is on the understanding of figurative language, knowledge of concepts from social studies, science and language arts, including knowledge of standard English syntax and grammar.

The range of experiences reflected in the test items is varied. The test includes everyday experiences of students, common vicarious experiences, and highly abstract concepts from social studies, science and literature.

B. Analytic Framework

As indicated, the assessment items were analyzed from the perspective of the LET model to determine the language, experience and thinking demands of each item. From the task analysis, learning prerequisites affecting comprehension were inferred. These prerequisites were used to provide a basis for a comparative analysis. (See Appendix C for "Criteria for Item Analysis.") A similar analysis was conducted on the foils and the item construction to determine task demands. This sub-analysis is considered to be important in that the foils and item construction are the determinants of what skills and knowledge are needed by the student in order to respond correctly to the item.

C. Analytic Methodology

The analytic methodology consists of a comparative analysis between 40% of the lowest P-score items and 40% of the highest P-score items for each Performance Indicator. Differences in the learning dimensions were compared in an effort to describe under what constellation of factors students did well and what constellations the student performed poorly. The improvement recommendations are based upon analysis of factors influencing the performance on a given item, including the objective of the item itself as it relates to the Performance Indicator.

Each item was individually analyzed as a criterion-referenced item. For the analysis, items below 50% State Mean P-score were interpreted to mean "needing improvement." An attempt was made to exclude from the analysis items which were considered to be inappropriate or not very well constructed.

For some Performance Indicators, Mean P-scores were high and only 5 or 30% of the items were below 50%. When this occurred, only items below the 50% P-score level were considered in formulating the improvement recommendations.

II. Results and Findings: Grade 4, Performance Indicator 1, "Understands Meanings of Words, Word Phrases, and Word Relationships"

Tasks Reflected in the Assessment Items

The items analyzed for this Performance Indicator reflect the following task demands: (See Appendix E)

1. Determining or predicting a word based upon sentence context clues.

2. Structuring cause and effect relationships in sentences or a paragraph to determine an appropriate word.

3. Applying a given definition by identifying a sentence in which the definition is used.

4. Comparing two sentences and determining an appropriate meaning.

5. Selecting an appropriate meaning based upon the sentence context clues.

6. Using a picture and sentence context to identify a word.

7. Translating a sentence into other words and matching it with another.

8. Identifying a phrase based upon a partially completed sentence.

The content areas reflected in the assessment items include social studies, science, homemaking and common experiences. Common experiences appear most often. Examples of common experiences include combing of hair, going to the store, identifying the classroom setting and knowing about cars and gasoline.

Analysis

The state mean for Grade 4, Indicator 1, is 59.72%. In the analysis, thirty-two out of forty-seven items were included. The range of P-scores in the top 40% group is 75.1% to 90.5%. In the bottom 40% group, P-scores range from 22.3% to 48.8%. (See Appendix F)

Items on which the students did well are:

1. Determining or predicting a word based upon sentence context.

2. Matching a picture and sentence by using context clues.

3. Comparing two sentences and determining their meaning.

4. Identifying phrases based upon partially completed sentences.

The majority of the tasks require the determination of an appropriate word through sentence context or paragraph meaning clues. The language used is relatively straight forward and simple in structure, concept and vocabulary. General everyday experiences are reflected, and the items are not based on abstract concepts. The thinking demands pertain primarily to recall and recognition. Some items require the learner to compare and contrast.

In the bottom 40% of the P-scores, the students had difficulty with the following types of items:

1. Determining an appropriate meaning or word by using the sentence context clues.

2. Structuring details into relationships, seeing cause and effect relationships as a prerequisite to predicting or selecting the appropriate word or meaning.

3. Identifying the sentence context utilizing a particular meaning.

4. Applying meanings to a particular sentence context.

5. Translating sentences into other words and matching the meaning.

Although "determining appropriate words" items appear in both the high and low P-score categories, there are some differences in the prerequisites of the tasks. In the low P-score category, the language demands are higher in most items as in the following examples:

Item A-34

Skiing has recently become one of the more popular sport in the United States. Because of its popularity, thousands of winter vacationers are flying north rather than south. In many areas, reservations are required months ahead of time.

I discovered the accommodation shortage through an unfortunate experience. On a sunny Saturday morning I set out from Denver for the beckoning slopes of Aspen, Colorado. After passing signs for other ski areas I finally reached my destination. Naturally I lost no time in heading for the nearest tow. After a stimulating afternoon of miscalculated stem turns I was famished. Well, one thing led to another and it must have been eight o'clock before I concerned myself with a bed for my bruised and aching bones.

It took precisely one phone call to ascertain the lack of lodgings in the Aspen area. I had but one recourse. My auto and I started the treacherous jaunt over the pass and back towards Denver. Along the way, I went begging for a bed. Finally a jolly tavernkeeper took pity and for only thirty dollars a night allowed me the privilege of staying in a musty, dirty, bathless room above his tavern.

The author's problem would have been avoided if he had

a. not tired himself out skiing
b. taken a bus instead of driving
c. looked for food as soon as he arrived
d. arranged for accommodations well ahead of his trip
e. I don't know

Item B-13 The wind pushed the boat farther and farther out to sea. It started to rain and the fog grew thick. The boy and his father were lost at sea.

What could help the boy and his father now?

a. thicker fog
b. a television
c. some fishing poles
d. someone to rescue them
e. I don't know

In item A-34, the vocabulary is more descriptive and the sentence patterns are more complex. The three sentences in B-13 start with noun-verb arrangements while most of the sentences in A-34 use complex sentence patterns. Sixty-four percent of the items in the low P-score group are "medium" in language difficulty, while 94% of the items in the high P-score group are "low."

While 66% of the low P-score items refer to vicarious or abstract experiences or concepts, including English instruction in the Philippines, period of history, and persuasion, 94% of the high P-score items are concrete type experience content, dealing with common school terms, cars, books, hair, scissors.

In the top 40% group, 75% of the items require simple recall and recognition tasks (C-3), while only 39% of the bottom 40% are of that type. In addition, the bottom 40% group require more structuring.

Item C-3 Park the _____ in the garage.

a. star
b. bench
c. car
d. I don't know

Item D-40 We must admit that, no matter how much the advertised things appeal to us, we can't buy them all. There are many things we don't need and others that we can't afford, and we should not let clever advertising cause us to _____ them.

a. sell
b. purchase
c. let
d. give
e. I don't know

For this grade level, the content of the bottom 40% differs considerably from that of the top 40%. While 100% of the items in the top 40% are general everyday experiences, the bottom 40% has 44% of the items of a general nature, 31% from social studies, 19% from science, and 6% from homemaking.

LET Considerations:

The students did well on items where the language is simple and straightforward, the experiences concrete and common, and the thinking requirements relate to recall and recognition.

The students had difficulty with complex sentence patterns and abstract vocabulary. Scores are lower on items where the experiences are vicarious and where thinking-structuring relationships are required.

What the Data Show

The data show that teachers should place greater emphasis on the teaching of the use of sentence and context clues, particularly in the content areas.

III. Results and Findings: Grade 4, Performance Indicator 2, "Demonstrates a Positive Attitude Toward Reading; Reads a Variety of Reading Materials for Various Purposes"

Tasks Reflected in the Assessment Items

The items analyzed for this Performance Indicator reflect the following task demands:

Group test: A-D (See Appendix E)

1. Degree of enjoyment of reading in school or during one's spare time.

2. Amount of time spent reading daily.

Individually-administered items:

1. Selecting reasons why people read.

2. Selecting topics about which the students enjoyed reading.

3. Categorizing reading activities into "likes," "dislikes," and "don't know" groups.

Individual interview data were not available by districts.

Analysis

The state mean for Grade 4, Indicator 2, is 62.01%. In packages A-D, the student responded to three multiple choice questions:

Item A-1 Do you enjoy reading during your spare time?

a. very much
b. much
c. little
d. very little
e. not at all

Item A-2 Do you enjoy reading during school time?

a. very much
b. much
c. little
d. very little
e. not at all

When you are not in school, about how much time do you spend reading books, paperbacks, magazines, newspapers, and other materials each day?

a. none
b. about 5 minutes
c. about 30 minutes
d. about one hour
e. more than one hour

The results for these items are as follows:

When in school:

60.7% - very to very much
38.1% - little to none

During their spare time:

60.3% - much to very much
38.7% - little to none

When not in school:

73.5% - 30 minutes to more than one hour
34.0% - less than 5 minutes

The results indicate that the majority of students like to read in school and also spend much time reading out of the school setting.

In packages E-F, the types of materials the students indicated they liked to read include, in the order of preference:

1. Literature
2. Social science
3. Natural science
4. Special interest

For the literature area, romance, plays and mysteries are the most popular types of reading material, representing 42.3% of the choices. The second most popular type (26.5%) include autobiographies, biographies, fairy tales, myths, folklore, and Bible stories.

During the interview, the students were asked to indicate what they like to read and what they didn't like to read. The results in order of preference are:

Like to read:

1. Newspapers (32.9%)
2. Letters (20.7%)
3. Comic books (18.2%)

Don't like to read:

1. Magazines (17.2%)
2. Books (6.7%)
3. For information (4.3%)

In another task, the students indicated what they like to do and what they didn't like to do. The task was structured so that six reading activities were imbedded in a list of twenty-one non-reading options. Of the six reading items, "reading the newspaper" (32.9%) was selected most often. Only 6.7% of the students selected "reading a book" as an activity they liked. "Reading for information (2.7%) and "reading a book" (4.3%) are the least liked of the six reading options.

In the next task, the student chose from a list of nine reasons why they read. The results are:

1. Interesting, fun, and enjoyable (78.2%)
2. Good use of time (76.7%)
3. Facts and information (69.8%)
4. Be better informed and choose what I should do (66.0%)
5. Learn about other people (63.6%)
6. How to do things (58.3%)
7. Understand myself better (57.0%)
8. Make up my mind (44.6%)
9. Make myself look better (26.7%)

The reason selected most often is reading for pleasure and enjoyment.

In a portion of the interview, the students were asked to decide whether a picture represented people interested in books. There were seven pictures on 3 x 5 cards. The pictures include:

1. Student reading on a hammock or at the beach.

2. Student browsing in a book store/at the library.

3. Student giving a book to a friend as a gift.

4. Student reading a book with understanding and a positive response.

5. Student reading a book with pleasure.

6. Student happy with a stack of books.

7. Student trying to understand.

The results indicate that the students interpreted relaxation, pleasure, understanding and browsing in the library as indicators of interest and trying to understand a book and sitting with a stack of books as negative indicators.

There were some interesting findings among the results:

1. The students expressed strongest liking for reading literature; yet in the actual forms of reading selected by them, they indicated that they disliked books and preferred newspapers and magazines.

2. The students read for facts and information; yet they dislike reading for information.

3. The students indicated they liked to read in school; yet they don't like to read books and for the purpose of acquiring information.

4. The students liked to read in their spare time for fun, primarily comics, newspapers, and magazines.

LET Considerations:

Because this indicator attends only to the assessment of attitude, no LET considerations will be provided.

What the Data Show

The data show that reading for fun or pleasure should be given greater emphasis as an instructional objective. In addition, reading for information should be made more interesting and relevant for all students.

IV. Results and Findings: Grade 4, Performance Indicator 3, "Locates and Uses Reading Resources Effectively"

Tasks Reflected in the Assessment Items

The items analyzed for this Performance Indicator (A-D items) reflect the following task demands: (See Appendix E)

1. Identifying appropriate sources of information such as magazines, dictionaries, encyclopedias, newspapers, and telephone books.

2. Determining whether a subject heading to be used in finding information in an encyclopedia is too general.

3. Knowing the use of the television guide to determine time, length and type of programs.

4. Identifying parts of a book including the glossary, index, and table of contents.

5. Knowing the definition of "biography".

Most of the items are of a general nature, e.g., days, baseball scores, use of the television guide for various purposes and general reference skills such as alphabetizing and using the dictionary. The content area from which items were selected is primarily social studies.

Analysis

The state mean for Grade 4, Indicator 3, is 43.80%.

In the analysis, 22 of 29 items in the A-D packages were used. Because of the low scores, only 10 items were used in the analysis for the top 40% group, representing 34% of the highest P-score items. The range of scores is 52.4% to 77.5%. In the bottom 40% group, the scores range from 10.9% to 41.6%. This range represents 12 items. (See Appendix F)

The students did well on the following types of items:

1. Identifying sources of information, particularly the newspaper and the dictionary.

2. Identifying parts of a book, such as the index and table of contents.

These tasks require the ability to comprehend literally, and to know the sources and parts of the book rather than to use the knowledge. The language demands are simple, and the experiences are common to most students in the 4th grade, e.g., reading newspapers and books.

The students did not do well on the following types of items:

1. Discriminating a specific subheading from a list of subheadings which is too general to use for finding information in an encyclopedia.

2. Using the television guide to determine the length of a given program and its rerun status.

3. Knowing appropriate sources of information, such as magazines, glossaries, and encyclopedias.

Social studies constitute 67% of the content, with 83% of the items representing reference skills and skills related to the use of the television guide.

The language requirements are similar and show no great disparity between the high 34% and the bottom 40% groups. However, there are some differences. While the items in the top 34% are based upon common sources of information, (the newspaper, dictionary, and content such as baseball scores, weather forecast, alphabetizing) the bottom 40% group deals with encyclopedias and social studies content (Animals of Arabia, Whaling in Nova Scotia, Hurricanes in the U.S. from 1940-1960). The major difference, however, is in the thinking and analysis load in 58% of the bottom 40% group relating to the determination of reference subheadings which are somewhat very general. An example is:

> There are four possible subheadings you may look for in an encyclopedia. Which is the one heading that would probably be too general to be of help in looking for information about the topic?
>
> Item C-13 Animals of the Arabian Desert Region
>
> a. Arabia
> b. region
> c. deserts
> d. animals
> e. I don't know

The major contrasts between the high and low categories are:

1. Emphasizing "knowledge of" versus analytical thinking

2. Using common everyday experiences versus social studies content

Item C-13 represents the typical task in the subheading task. Items such as C-13 demand not only some conceptual knowledge of the topic but the need to discriminate among the foils, analyzing for most general subheading. On the other hand, on items in the high 34% group, "knowledge of" rather than a highly abstract analysis was required. The sources are common ones, e.g., newspaper and dictionaries.

The E-F packages are comprised of 26 items. The students did much better on the E-F items than on the A-D items. The mean P-score for the E-F packages is 70% while the mean P-score for the A-D packages is 43.8%.

The tasks in the E-F packages consist of:

1. Using resource materials (newspaper and brochures) to find a page or information about a particular subject.

2. Knowing information sources.

Included in the analysis of E-F items are 17 items, 11 in the top 40% and 6 in the bottom 23%. These represent 65% of the total items. Due to the high scores in this indicator, only 23% of the lowest scores are considered as low P-score items.

In the top 40% P-score group, the scores range from 75.4% to 98.7%. Items on which the students did well are:

1. Knowing information sources.

2. Identifying various sources and forms of information, particularly, using the dictionary, recognizing pamphlets as a source of information, and recognizing the television guide as a source of information.

In the bottom 23%, the P-scores range from 21.6% to 56.0%. Items on which students did not do well are:

1. Using resource materials, such as the newspaper to find out the time of low tide and the encyclopedia to determine the page numbers of a particular topic.

2. Knowing sources of information for information on the tide.

3. Locating the television guide in the newspaper.

LET Considerations:

The students did well when the experiences were concrete, the language demands were simple and the thinking demands remained at the information recall level.

The students had difficulty when the item required knowledge of concepts from the content areas, required application of knowledge and the analysis of elements and relationships.

What the Data Show

The data show that, among the sources of information taught to students, the use of the encyclopedia should be emphasized, especially by language arts, social studies, and science teachers.

V. Results and Findings: Grade 4, Performance Indicator 4, "Follows Written Directions"

Tasks Reflected in the Assessment Items

The items in packages E-F include performance items which require the students to read sets of instructions and to perform a task with materials or objects which have been provided. The task demands pertain to:

1. Filling out application forms and order blanks.
2. Constructing a tinker toy object.
3. Following directions on a city model.
4. Writing words on a line and connecting dots.
5. Following game instructions with marbles and blocks.

Analysis

For this Performance Indicator, the analysis was limited to the individually-administered items. (See Appendix F)

The tasks which the student did well on are:

1. Following initial or early directions in a sequence on a city model.
2. Completing simple order form for a musical record.
3. Filling in the blanks for a children's club application.
4. Following directions in a paper and pencil task.
5. Following directions using blocks and marbles.
6. Constructing a tinker toy object.

In general, the directions are worded simply and do not use specialized vocabulary or complex sentence patterns. The items rely on common knowledge and experience, such as local buildings and landmarks.

The items in the bottom 40% P-scores include tinker toy tasks and complex map tasks.

Summary of the Analysis A-D

Overall, the students did very well on test items for this indicator. The analysis indicates that only two areas raise difficulties. These are abstract tinker toy tasks and complex sequential map tasks.

LET Considerations:

The students did well when the directions and instructions were simply worded, required no specialized vocabulary, and common experiences were used.

The students did not do well when the tasks became more abstract in nature and analytical, or required a series of tasks to be performed sequentially.

What the Data Show

The data show that instruction should emphasize the reading of not only simple but also complex directions.

VI. Results and Findings: Grade 4, Performance Indicator 5, "Gets the Main Idea and Supportive Details from a Selection"

Tasks Reflected in the Assessment Items

The items analyzed for this Performance Indicator reflect the following task demands: (See Appendix E)

1. Locating, structuring, reorganizing, or recalling details.
2. Translating an idea into other words.
3. Inferring the main idea and relating details to a key phrase.
4. Identifying topic sentences.
5. Knowing time indicators in language.
6. Recalling specific number of details.
7. Inferring organizational structure.
8. Identifying similarities.

The content used for the assessment items reflect general topics, social studies, science, and literature.

Analysis

The state mean for Grade 4, Indicator 5, is 45.54%. In the analysis, twenty out of twenty-four items in Indicator 5 were included. The range of P-scores in the top 40% is 63.2% to 79.63%. In the bottom 40%, P-scores range from 18.7% to 30.6%. (See Appendix F)

Items on which the students did well are:

1. Locating, structuring, reorganizing or recalling details.
2. Recalling specific number of details.
3. Identifying topic sentences.
4. Translating an idea into other words.

The major type of task demand for the top 40% of the P-scores pertains to locating, structuring, reorganizing and recalling details. Ninety percent of the items in this category are rated "low" on language demands. The sentences are primarily simple in structure. The paragraphs usually consist of three to four sentences. The vocabulary is not difficult or ambiguous. The experiences represented are largely vicarious in nature, dealing with being lost at sea and knowing the behavior of an imaginary ant and spider.

The thinking operations required are primarily recall and translation (67%), with structuring relationships required 25% of the time. Convergent thinking is required in 8% of the tasks. The content areas used are general, 60%; literature, 30%; and social studies, 10%.

The task demands of the items in the bottom 40% P-score group are:

1. Locating, structuring, reorganizing, or recalling details.

2. Inferring the main idea and relating details to key phrase.

3. Translating an idea into other words.

The task analysis on the bottom 40% items indicates that the major difference is a high language demand for the bottom 40% group which is considerably higher than items in the top 40%. This observation is borne out in the following sample test items:

Item A-6 Read the story and complete the sentence which follows it.

The wind pushed the boat farther and farther out to sea. It started to rain and the fog grew thick. The boy and his father were lost at sea.

Item A-33 Read the passage and answer the questions.

One spring Farmer Brown had an unusually good field of wheat. Whenever he saw any birds in this field, he got his gun and shot as many of them as he could. In the middle of the summer, he found that his wheat was being ruined by insects. With no birds to feed on them, the insects had multiplied very fast. What Farmer Brown did not understand was this: A bird is not simply an animal that eats food the farmer may want for himself. Instead, it is one of the many links in the complex surroundings, or environment, in which we live.

How much grain a farmer can raise on an acre of ground depends on many factors. All of these factors can be divided into two big groups. Such things as the richness of the soil, the amount of rainfall, the amount of sunlight, and the temperature belong together in one of these groups. This group may be called non-living factors. The second group may be called living factors. The living factors in any plant's environment are animals and other plants. Wheat, for example, may be damaged by wheat rust, tiny plants that feed on wheat, or it may be eaten by plant eating animals such as birds or grasshoppers...

It is easy to see that the relations of plants and animals to their environment are very complex, and that any changes in the environment are likely to bring about a whole series of changes.

In regard to the content areas reflected in the test items, the most discriminating items between the high and low scores relate to science. In the bottom 40% group, 50% are science-related topics. No science-related topics appear in the top 40% group. More general topics and literature-based items were correctly answered in the top 40% group, while more social studies and science items were missed in the bottom 40% group.

LET Considerations:

The students did well on the items consisting of simple sentences and vocabulary, which also reflect general content and require simple recall and recognition.

The students had difficulty when the items contained vocabulary from specialized content areas (science and social studies), abstract concepts, and required the inferring of relationships, particularly part to whole and cause and effect relationships.

What the Data Show

The data show that greater instructional emphasis should be placed on inferring main ideas and identifying cause and effect relationships.

VII. Results and Findings: Grade 4, Performance Indicator 6, "Demonstrates that the Student Can Read a Variety of Materials (Graphs, Tables, Charts) for Various Purposes"

Tasks Reflected in the Assessment Items

The items analyzed for this Performance Indicator reflect the following task demands: (See Appendix E)

1. Literal comprehending of words, phrases and sentences in reading maps, street signs, gum wrappers, and can labels.

2. Relating sentence meaning to a picture.

Analysis

The state mean for Grade 4, Indicator 6 is 70.01%.

For this indicator, only one item has a state mean P-score below 60%. This indicates that the students did very well on this Performance Indicator. (See Appendix F)

Items on which the student did well are:

1. Relating sentence meaning to a picture or map.

2. Literal comprehending of street signs.

3. Literal comprehending of sentences.

The tasks in general for this indicator are simple and do not demand a high level of language experience or thinking operations. All of the items tested literal comprehension but required basic knowledge of map reading skills. The map items that had to do with direction were missed (north, south, east and west.) This may be because people in Hawaii generally do not use these terms for directions as often as on the mainland. Another possibility is that orientation and directionality are abstract ideas.

Because of the high mean score, only one item had a state mean score below 50%. The items in the bottom group pertain to:

1. Determining correctness of a relative position of one landmark to another on a map.

2. Determining which can has more of one ingredient than another can.

LET Considerations:

The student did well when the language was simple, the experiences concrete, and the thinking at the recall and recognition level.

The students did not do well when the task was abstract and required spatial and orientation knowledge.

What the Data Show

The data show that the concepts of north, south, east and west should be taught to students, as well as the reading of street maps. The social studies program appears to be an appropriate setting for this type of instruction.

VIII. Results and Findings: Grade 4, Performance Indicator 7, "Demonstrates that the Student Can Read Critically

Tasks Reflected in the Assessment Items

The items analyzed for this Performance Indicator reflect the following task demands: (See Appendix E)

1. Inferring conclusions, effect, explanations, and mood.
2. Interpreting figurative language.
3. Translating sentences or phrases into other words meaning the same (literal comprehension).
4. Using situational and sentence context to predict a word.
5. Inferring authors' purpose.
6. Applying a generalization.
7. Recalling literal details.
8. Analyzing elements.

Poems, essays and simple narratives, primarily fiction, were used most often (58%). About 42% of the items reflect general topics such as flowers, water, Christmas shopping, television preferences, and a fight in school.

Analysis

The state mean for Grade 4, Indicator 7, is 47.36%. In the analysis, 24 out of 29 items were included. The range of P-scores in the top 40% is from 55.5% to 72.2%. The range of P-scores in the bottom 40% is from 14.2% to 46.1%. (See Appendix F)

Items on which the students did well are:

1. Inferring conclusions, implications and mood.
2. Using situational and sentence contexts to predict a word.
3. Translating sentences or phrases into other words meaning the same.
4. Recalling literal details.
5. Inferring authors' purpose.
6. Analyzing elements.

The bottom 40% results reveal that the students had difficulty with the following types of task demands:

1. Inferring consequences, implications, effects, conclusions.

2. Interpreting figurative language.

3. Translating phrases or sentences into other words meaning the same.

The top 40% P-score group again reveals the same pattern of language use and requirements. In the top 40% P-score items, the language level is rated "low" in 92% of the items. The bottom 40% P-score group has only 33% in the "low" rating category while 50% is rated "high" in language demands. The high language demand is largely due to the use of figurative language. The contrast of language use is shown in the following items:

Item B-13

The wind pushed the boat farther and farther out to sea. It started to rain and the fog grew thick. The boy and his father were lost at sea.

What could help the boy and his father now?

a. thicker fog
b. a television
c. some fishing poles
d. someone to rescue them
e. I don't know

Item B-34

Its quick soft silver bell beating, beating
And down the dark one ruby flare
Pulsing out red light like an artery,
The ambulance at top speed floating down
Past beacons and illuminated clocks
Wings in a heavy curve, dips down,
And brakes speed entering the crowd.
The doors leap open, emptying light;
Stretchers are laid out, the mangled lifted
And stowed into the little hospital.
Then the bell, breaking the hush, tolls once,
And the ambulance with its terrible cargo
Rocking, slightly rocking, moves away,
As the doors, an afterthought, are closed.

What does the word "Wings" in Line 6 mean in the context of this poem?

a. flies
b. turns
c. parts of a building
d. the forelimbs of a bird
e. I don't know

The bottom 40% group contains slightly more abstract items, but there are no large differences in this category, except for many structuring tasks, particularly cause and effect and part to whole relationships. The factor affecting the P-scores most seems to be the use of figurative language. Half of the items in the bottom 40% group are from literature, including poems and narratives using figurative language. Although the top 40% group had 58% using literature content as opposed to 74% using literature-based items for the bottom 40% group, most of the top 40% group items are simple narratives which do not rely heavily on figurative language.

A major task requirement is the process of inferring a conclusion, implication or mood. Three items utilize convergent thinking by requiring the predicting of a word in the context of a sentence. Three items address analytical processes, one for analysis of literal elements and two for analysis of author's purpose. Included in the test are items which require literal comprehension and translation requiring no integrative thinking strategies.

LET Considerations:

The students did well in tasks using simple narratives, concrete experiences and general topics. The students also did well in inferring ideas when the language level was low.

The students had difficulty when figurative language was used and causal and part to whole relationships were required.

What the Data Show

The data show that the interpreting of figurative language in relation to the study of literature should receive greater emphasis, in addition to the teaching of cause and effect relationships and interpretation skills such as predicting outcomes, drawing conclusions, and making inferences.

IX. Results and Findings: Grade 8, Performance Indicator 1, "Understands Meanings of Words, Word Phrases, and Word Relationships"

Tasks Reflected in the Assessment Items

The items analyzed for this Performance Indicator reflect the following task demands: (See Appendix E)

1. Using the context of a paragraph to determine an appropriate word.

2. Completing word analogies.

3. Matching a word with a phrase or sentence which exemplifies the meaning of the word.

4. Using the context of a sentence to determine the proper meaning of a word.

5. Matching a meaning with a sentence which exemplifies the meaning.

6. Matching sentence context with retranslated sentences that mean the same.

Items based on word analogies used words from general rather than specialized vocabulary. Nine percent of the items reflect the area of science, 9% are from social studies.

Analysis

The state mean for Grade 8, Indicator 1, is 56.61%. In the analysis, 44 out of 55 or 80% of the items were included. The range of P-scores in the top 40% P-score group is from 61.3% to 93.2%. The range of scores in the bottom 40% P-score groups is from 8.2% to 52.5%. (See Appendix F)

The students did well on the following items:

1. Using the situational (paragraph) context to determine an appropriate word.

2. Completing word analogies
   - Object-function relationship
   - Comparison, modifier-noun relationship
   - Part-whole relationship

3. Matching a word with a phrase or sentence which exemplifies the meaning of the word.

4. Matching sentence context with retranslated sentences that mean the same.

5. Using the sentence context to determine proper meaning of a word.

6. Matching a meaning with a sentence which exemplifies the meaning.

The primary task for items in the top 40% pertains to the use of a situational context to predict meanings and words. Other major tasks include the use of analogies and the proper matching of a word with a sentence which exemplifies the meaning of the word. The language is relatively clear and simple. Eighty percent of the items in this group are rated "low" in language difficulty. The thinking process is relatively simple, requiring mainly recall and recognition. However, the analogy items require divergent thinking. The student was required to perceive relationships and then to predict words which might fit the given relationships.

The content areas are primarily general in nature but 9% are social studies items and 9% science items.

In the bottom 40% P-score group, the student had difficulty with the following types of items:

1. Completing word analogies.

   a. Associating a pair of words, determining the relationship, comparing the relationship with another key word, using divergent thinking and then predicting missing words, establishing a part-whole analogical relationship.

   b. Associating a pair of words, determining the relationship, comparing the relationship with another key word, using divergent thinking and then predicting missing words, establishing a synonymous relationship.

2. Using the situational context to determine an appropriate word.

3. Matching a word with a phrase or sentence which exemplifies the meaning of the word.

Analogies comprise 45% of the tasks in the bottom 40% group. Some of these were not simple associational tasks, but required the student to go through multiple mental steps, as in the following example:

Item B-47 sit (A) - sleep (B) Chair (C) - _____ (D)

a. bed
b. rest
c. stand
d. table
e. I don't know

To get the correct response on this item, the student first has to determine the relationship between A and B, then determine a relationship between A and C, then predict a B and D (the correct response) relationship. This is a relationship based on an object-action relationship.

In a simpler analogy in the top 40% group, the student task was simpler.

Item A-44 nose (A) - smell (B) Tongue (C) - _____ (D)

a. food
b. taste
c. eat
d. talk
e. I don't know

For this item, the student had to identify the appropriate relationship between A and B and then was required to select the C and D relationship which paralleled the A and B relationship. It was a direct object-function relationship.

Although both are analogies, one is more complicated (B-47) and requires more steps than the other (A-44). Even when the analogies required the determination of relationships, the students selected simpler object-function types of answers, e.g.:

gasoline - car food - <u>eat</u> ("person" was the correct answer)
bread - flour book - <u>read</u> ("paper" was the correct answer)

Another area of difficulty was in the student's use of a context consisting of a paragraph. The students had difficulty predicting and selecting a word which best fit into a blank. There were some major differences in the task demands between the situational context items in the top 40% P-score group and the bottom 40% P-score group. Of these differences, the major one is that the content areas are primarily science (50%) content with some social studies (25%) in the bottom group, while in the top 40% P-score group only 28.5% were science and 14.3% social studies.

Concomitant with this was the specialized vocabulary related to the concepts of the content area. In contrast, the situational context items in the top 40% P-score group utilized general content 63% of the time, science 25% and social studies 12% of the time. The language, therefore, was more common and less specialized. To illustrate the points being made, two test items are reproduced below:

Item B-6 We saw a TV show about cowboys. They rode very fast on their horses and shot bad men with their guns. Mother said, "Real ____ work hard taking care of ____. They do not spend their time ____ bad men."

a. shooting
b. beating
c. shaking
d. soaring
e. I don't know

Item C-47 Plants with little or no woody material in their stems, such as plantain, beans, and grass, are called herbs. Low woody plants are called shrubs, and taller woody plants are called ____.

a. forest
b. limbs
c. bushes
d. trees
e. I don't know

The students also had difficulty matching a word to a phrase which exemplified the meaning of the word. An example of this is:

Item A-16 Unpretentious

a. "We ordered a three-thousand dollar piano," Mary informed the group.
b. a fourteen-tier chandelier
c. a custom-built Cadillac
d. a two-room house
e. I don't know

The students did well when a sentence was given, with one of the words underlined and the student's task was to determine the meaning of the word underlined.

Item D-4 The factory workers went on strike.

a. hit
b. stop work to get better pay, shorter hours, etc.
c. sound a clock makes
d. I don't know

There was a difference in the language level as well as the process of arriving at the proper answer. In task A-16, the students had to identify an application of a meaning; in D-4, the task was only to identify a meaning.

LET Considerations:

The students did well when the content was of a general type and the vocabulary and content were not specialized.

In addition, the students did well in structuring direct relationships and determining meanings in situations where a meaning context was given. The students also did well in tasks requiring literal comprehension.

The students had difficulty in analyzing relationships, determining meanings of words without the benefit of a sentence context, understanding specialized vocabulary, understanding concepts from the content areas, particularly science and social studies, and analyzing analogical relationships.

What the Data Show

The data show that the teaching of context clues within larger language units (paragraph) should be emphasized. In addition, the data show that analogical reasoning should be stressed by teachers in the content areas.

X. Results and Findings: Grade 8, Performance Indicator 2, "Demonstrates a Positive Attitude Toward Reading; Reads a Variety of Reading Materials for Various Purposes"

Tasks Reflected in the Assessment Items

The items for this indicator are not based on "correct" answers. The students were asked to respond by choosing materials, participating in a personal interview, and answering "paper and pencil," as well as multiple choice types of tasks. The major tasks include:

Group test A-D (See Appendix E)

1. Degree of enjoyment of reading in school or in one's own spare time.

2. Amount of time spent reading daily.

Individual interview E-F

1. Selecting reasons why people read.

2. Deciding whether pictures represented people who are interested in books.

3. Selecting topics about which the students enjoyed reading.

4. Categorizing reading activities into "likes," "dislikes," and "don't know" groups.

Analysis

The state mean for Grade 8, Indicator 2, is 49.84%. In packages A-D, the student responded to three multiple choice questions (See Appendix F) such as:

Item A-1 Do you enjoy reading during your spare time?

a. very much
b. much
c. little
d. very little
e. not at all

Item A-2 Do you enjoy reading during school time?

a. very much
b. much
c. little
d. very little
e. not at all

Item A-3 When you are not in school, about how much time do you spend reading books, paperbacks, magazines, newspapers, and other materials each day?

a. none
b. about 5 minutes
c. about 30 minutes
d. about one hour
e. more than one hour

Students expressed a positive attitude toward reading:

In school:

35.2% - much to very much
64.3% - little to none

During their spare time:

41.9% - much to very much
58.0% - little to very little

When not in school:

26.9% - less than 5 minutes
72.5% - 30 minutes to more than one hour

The results indicate that the majority of students (64.3%), in contrast to the 4th Graders, did not enjoy reading in school. Also, students (58.0%) spent "little to very little" time reading in their spare time. Seventy-two and one-half percent of the students, however, indicated that they read 30 minutes to more than one hour daily. This contradicts the findings from the previous items where 58% said that they enjoyed reading very little. Yet, 72.5% said that they read 30 minutes more a day.

For packages E-F, the type of materials the students indicated they like to read are, in order of preference:

1. Literature
2. Social Science
3. Social Interest
4. Natural Science

Within the literature category, romance was the most popular area (37.4%) with adventure stories, second (34.1%).

The students indicated what they liked and didn't like to read.

Like to read:

1. Newspapers
2. Magazines
3. Letters

Didn't like to read:

1. Looking for information
2. Reading a book

The interview was structured so twenty-one other non-reading activities were selected by the child with seven reading activities as options within this list. Thirty-one and eight-tenths percent of the students selected newspapers as materials they like to read.

Reading magazines and letters were close with 23.0% and 21.5%, respectively. "Reading for information" was the most disliked activity with a P-score of 37.0%. "Reading a book" was the second most disliked activity with a P-score of 33.8%. Only 8.0% of the students selected "reading a book" is a "liked" task. Two and one-tenth percent of the students selected "looking for information" as an activity which they liked.

Why students read:

In this task, the students chose from a list of nine reasons why they read. The results are:

1. Looking for facts (88.9%)
2. Interesting and fun (84.4%)
3. Being better informed (75.4%)
4. Making good use of time (74.0%)
5. Learning about other people (73.8%)
6. Learning how to do things (67.5%)
7. Understanding myself (46.7%)
8. Making up my mind (40.1%)
9. Looking better (28.3%)

The findings indicate that students read for facts and information as well as for pleasure.

What the Data Show

The data show that reading for fun or pleasure should be given greater emphasis as an instructional objective. In addition, reading for information should be made more interesting and relevant for all students.

XI. Results and Findings: Grade 8, Performance Indicator 3, "Locates and Uses Reading Resources Effectively"

Tasks Reflected in the Assessment Items

1. Knowing the content of a thesaurus.
2. Determining the similarity between a thesaurus and a dictionary.
3. Using the table of contents to find an appropriate heading.
4. Knowing the card catalog, e.g., card number, subject card, non-fiction, alphabetizing, subject matter of book, call number, letter, author.
5. Using the index to locate information.
6. Knowing the content of an appendix.
7. Knowing sources of information.
8. Knowing what a biography is.
9. Locating a title page.
10. Knowing the function of a bibliography.
11. Knowing the function of a reference book.
12. Knowing what a dedication is.
13. Knowing what constitutes non-fiction, factual material.
14. Knowing what a copyright date is.
15. Finding a page number from the table of contents.
16. Recognizing a biographical work from its title.
17. Alphabetizing, finding a name in the telephone book.
18. Knowing the function of a glossary.
19. Using the index to find a page or entry.
20. Inferring the content of a magazine from its title.
21. Knowing the elements of the table of contents.
22. Knowing the function of the card catalog.
23. Knowing what a glossary is.

24. Using the television guide.

25. Using the dictionary.

Analysis

The state mean for Grade 8, Indicator 3, is 56.05%. In the analysis, 40 of the 50 items or 80% were used. The range of scores in the top 40% group is from 61.2% to 89.3%. The range in the bottom 40% group is 11.5% to 51.2%. (See Appendix F)

Items on which the students did well include:

1. Finding a page number from the table of contents.

2. Alphabetizing, finding a name in the telephone book.

3. Knowing the function of a glossary.

Social studies comprised 40% of the items in this group, followed by general reference knowledge, with 25%; general topics, 20%; science, 5%; and literature, 5%.

The tasks in the bottom 40% group include:

1. Knowing the content of the thesaurus.

2. Determining the similarity between the dictionary and thesaurus.

3. Knowing the card catalog; knowing what the call number represents, the subject card, understanding what non-fiction means, how call numbers are determined.

4. Knowing the function of an index.

5. Knowing the sources of information.

6. Knowing what "biography" means.

7. Alphabetizing the card catalog.

8. Locating a title page.

9. Knowing the function of a bibliography.

10. Knowing the function of the copyright date.

The content consists of 74% social studies items, with 10% science and 16% items pertaining to reference skills.

The items do not have a high language contrast between the top P-score and bottom P-score groups. The test items measure "knowledge of" rather than the use of thinking or analytical skills. The major

contrast is in the content drawn upon. In the bottom 40% P-score group, 74% of the items are social studies items, as contrasted to 35% for the top P-score group. Also, 20% of the top P-score group items are of a general nature, while there are none in the bottom 40%. The students did well on items pertaining to the use of the television guide in the top P-score group, while no television guide items appeared in the bottom P-score group.

The items in the bottom P-score group which do not appear in the top P-score group are items referring to the thesaurus, appendix, and bibliography. The card catalog items appear in both the top and bottom P-score groups. In the bottom P-score group, items include knowledge of the terms "call number," "subject card," "non-fiction" and the alphabetical filing system. In the top P-score group, the items include identification of the letter and the author of the book.

LET Considerations:

The students did well on items which required no specialized vocabulary, and which utilized concrete and general topics. The students also did well when the items required literal comprehension, recall and recognition, and knowledge of reference skills.

The students had difficulty on items where the tasks were abstract or vicarious and the content area concepts and vocabulary were specialized.

What the Data Show

The data show that all content area teachers should give greater emphasis to instruction on the use of the thesaurus, appendix, bibliography, card catalog, the Reader's Guide to Periodical Literature, atlas, and almanac.

XII. Results and Findings: Grade 8, Performance Indicator 4, "Follows Written Directions"

Tasks Reflected in the Assessment Items

The items analyzed for this Performance Indicator reflect the following task demands:

1. Following written directions on a city model, locating various stores, shops, hotels, and noting street names and signs.

2. Reading rules of a card game and answering questions related to the rules.

3. Following written directions in a simple experiment.

4. Drawing a combination of geometric figures.

5. Writing words on a line and connecting dots.

6. Opening a combination lock.

7. Filling a job application form.

8. Writing numbers in an appropriate geometric figure.

Analysis

The state mean for Grade 8, Indicator 4, is 68.56%. The students did well on test items for this indicator. Student performance on only two items fell below the 50% level. (See Appendix F)

The tasks included a wide range of processes. These consist of following rules and procedures, filling in information, following instructions and following extensive sequences. With the exception of following extensive sequences, the students did well on all of these areas.

The tasks for the two lowest P-scores were abstract and required the students to follow a long series of sequential steps, each dependent upon the previous step. These were the map tasks and the task requiring the drawing of a geometric figure.

What the Data Show

The data show that instruction should emphasize not only simple but especially complex directions based on numerous sequential steps.

XIII. Results and Findings: Grade 8, Performance Indicator 5, "Gets the Main Idea and Supportive Details from a Selection"

Tasks Reflected in the Assessment Items

The items analyzed for this Performance Indicator reflect the following task demands: (See Appendix E)

1. Locating, structuring, reorganizing or recalling details.
2. Inferring the main idea and relating details to a key phrase.
3. Inferring organizational structure.
4. Translating an idea into other words.
5. Identifying similarities.

The test items primarily measure locating, recalling, and reorganizing of details. Twenty-three percent of the items pertain to the identification of main ideas and 19% require structuring of the content used in the items; 30% are from social studies; 25%, science; 20%, literature; and 25%, general topics.

Analysis

The state mean for Grade 8, Indicator 5, is 60.14%. Twenty out of 26 items or 77% were included in the analysis. The range of P-scores in the top 40% group is from 67.3% to 92.7%. P-scores in the bottom 40% range from 19.7% to 54.6%. (See Appendix F)

Items in the top 40% P-score group are:

1. Locating, structuring, reorganizing or recalling details.
2. Translating an idea into other words.
3. Inferring the main idea and relating details to a key phrase.
4. Inferring organizational structure and structuring details.

A major task in the top 40% group pertains to locating, recalling and reorganizing details at the literal level. Another common task pertains to translating an idea into other words which mean the same. Seventy percent of the items refer to concrete experiences.

Major tasks in the bottom 40% P-score group include:

1. Inferring the main idea and relating details to a key phrase.

2. Inferring organizational structure.

3. Locating, structuring, reorganizing or recalling details.

4. Translating an idea into other words.

Task analysis of the bottom 40% P-score group items indicates a high language demand. Sentence patterns are more complex and vocabulary levels are higher and more specialized. In the bottom 40% group, 70% of the items are rated "high" in language requirements as opposed to the top 40% group, of which 70% of the items are rated "low" in language demands. Of the top 40% group, 50% of the items pertain to vicarious and abstract notions, while 100% are abstract or vicarious for the comparable bottom 40% group.

Following is an example of a bottom 40% group item:

Item A-34

Any attempt to label an entire generation is unrewarding, and yet the generation which went through the last war, or at least could get a drink easily once it was over, seems to possess a uniform, general quality which demands an adjective. It was John Kerouac, the author of a fine, neglected novel The Tow and the City, who finally came up with it. It was several years ago, when the face was harder to recognize, but he had a sharp, sympathetic eye, and one day he said, "You know, this is really a beat generation." The origins of the word "beat" are obscure, but the meaning is only too clear to most Americans. More than mere weariness, it implies the feeling of having been used, of being raw. It involves a sort of nakedness of mind, and, ultimately, of soul; a feeling of being reduced to the bedrock of consciousness. In short, it means being undramatically pushed upon against the wall of oneself. A man is beat whenever he goes for broke and wagers the sum of his resources on a single number; and the young generation had done that continually from early youth.

What is the MAIN point of the paragraph?

a. The beat generation
b. The labeling of a past generation
c. The definition of the word "beat"
d. I don't know

An example from the top 40% group in inferring main ideas follows:

Item C-22 Colorado has many mountains. Colorado has more than 1,000 peaks two miles high. Gold was discovered in Colorado in 1859. A total of 54 of the 69 highest mountains in the United States are in Colorado.

Which words tell what this passage is MAINLY about?

a. fish in Colorado
b. hunting in Colorado
c. mining in Colorado
d. mountains in Colorado
e. I don't know

The bottom 40% group used science 40%, literature 30% and social studies 30% as its media. In the top 40% group, general topics were used 67% of the time with social studies, literature and science, 11% each. The greatest contrast occurs in materials dealing with science. The bottom 40% group contains items about scarlet fever and poison ivy, their effects and treatments, and types of nuclear blasts and their characteristics. The content in the top 40% group contains topics such as cars, forest fire prevention, and Helen Keller's method of teaching.

LET Considerations:

The students did well when the language was simple and factual, the content of a general nature and when the tasks were at the literal and structural levels of thinking.

The students had difficulty when the sentence patterns were complex, the vocabulary specialized and the content concepts were abstract. Inferring main ideas and convergent level thinking types of test items posed problems for the students.

What the Data Show

The data show that the skill of inferring main ideas should be emphasized by teachers in all content areas.

XIV. Results and Findings: Grade 8, Performance Indicator 6, "Demonstrates that the Student Can Read a Variety of Materials (Graphs, Tables, Charts) for Various Purposes"

Tasks Reflected in the Assessment Items

The items analyzed for this Performance Indicator reflect the following task demands: (See Appendix E)

1. Reading a graph with three axes to determine data beyond what is given.
2. Using a time schedule to determine which appointments can be met.
3. Reading a graph with three axes to determine time of most fatal accidents.
4. Reading a report card to determine use of the legend.
5. Reading street signs.
6. Reading a map to determine proximity, directionality, and routes.
7. Reading a gum wrapper to determine lasting sweetness.
8. Reading a sign to determine position on the door.
9. Matching a sentence to a picture.
10. Reading can labels to determine quantity differences in quantity of ingredients.

Analysis

The state mean for Grade 8, Indicator 6, is 73.5%. There are only two test items below 50% in this indicator. (See Appendix F)

The top 40% P-score group includes eight items with a range of 83.1% to 96.1%. Since only two items are below 50%, two additional items below 60% were used in the analysis to determine the bottom 40% P-score group. Therefore, no conclusions will be drawn on the bottom 40% group.

Items which the students did well on include:

1. Matching a sentence to a picture.
2. Comprehending street signs and gum wrappers.
3. Determining proximity and routes on a street map.
4. Reading a sign to determine position on a door.

In the bottom 40% P-score group, the students had difficulty with the following items:

1. Reading graphs with three axes.

2. Using a chart to determine time and schedule of events.

3. Knowing the legend for a chart or graph.

Analysis

The tasks for this indicator require skills related to literal comprehension. For most of the items, single sentences or phrases were used. The content included street signs, gum wrappers, door signs, a picture, a report card, a time chart and a graph.

The students did very well on this indicator. For the three lowest P-score items, a graph and time chart, the vocabulary is more difficult and the tasks require specialized knowledge and interpretation. The graph task also requires analytical thinking to determine which statements extend beyond the data given in the chart.

LET Considerations:

The students did well when the language was simple and the vocabulary was of a general nature. The students also performed well when the topics were concrete and thinking remained at the recall or recognition level.

The students had difficulty when the language requirements were high, the task abstract and analytical thinking skills were required.

What the Data Show

The data show that the interpretation of charts and graphs should be emphasized, especially in such subject areas as social studies, science, mathematics, and vocational-technical education courses.

XV. Results and Findings: Grade 8, Performance Indicator 7, "Demonstrates that the Student Can Read Critically"

Tasks Reflected in the Assessment Items

The items analyzed for this Performance Indicator reflect the following task demands: (See Appendix E)

1. Analyzing of purpose, point of view.
2. Analyzing of element particulars--to deduce particulars.
3. Analyzing of relationships, inter-relationships, and part-whole relationships.
4. Inferring main ideas.
5. Inferring detail, line.
6. Situational context.
7. Retranslating main idea.
8. Interpreting figurative language, details, meaning, mood, and main idea.
9. Retranslating a detail.
10. Identifying details, cause and effect relationships.
11. Predicting outcomes.

A wide variety of tasks are reflected in the test. Some are analytical types of tasks and require multiple thinking strategies. Some require divergent thinking only and others demand recall and retranslation. The analytical tasks pertain to deducing the author's purpose, identifying point of view and identifying the mood of a selection. Identifying fallacies and analyzing relationships are also required. These items comprise 40% of the total number of items.

Literature content is used for 40% of the items, with social studies and general topics representing 24% each. The literature items consist of poems and essays. The social studies content consists of history and sociological topics, and the general topics include television, a school fight and Christmas shopping.

Analysis

The state mean for Grade 8, Indicator 7, is 46.23%. The range of scores in the top 40% P-score group is from 61.4% to 90.2%. The range of scores in the bottom 40% group is from 11.0% to 32.5%. Seventy percent or 28 out of 40 items were used in the analysis. (See Appendix F)

In the top 40% group, the type of items the students did well on are:

1. Analyzing of purpose.
2. Analyzing of relationship and inter-relationships.
3. Retranslating main idea.
4. Interpreting figurative language, details, and meaning.
5. Inferring main idea.
6. Analyzing of fallacies, accuracies.
7. Identifying details in cause and effect structure.
8. Inferring details, time divergent.
9. Predicting outcomes.
10. Recalling details.

Only 26% of the items in the top 40% group require higher analytical skills. Thirteen percent of the items deal with using or interpreting figurative language. The language demands in 64% of the items are rated "low," with the experience level of 43% of the items being "concrete" and 43% being "vicarious" in nature. Ninety-four percent of the items are based on general content; 47% literature content; and 7% science content.

The items in the bottom 40% P-score group include:

1. Analyzing of purpose, point of view, and attitude.
2. Analyzing of relationships, inter-relationships, part-whole and causal relationships.
3. Analyzing of elements or particular, deducing.
4. Inferring main idea.
5. Interpreting figurative language for details, meaning, mood, and main idea.
6. Retranslating main idea.
7. Inferring the main idea.
8. Predicting divergent.

Forty percent of the items in the bottom 40% P-score group require higher analytical skills than the top 40% P-score group. Thirty-five percent of the items deal with comprehending or

identifying the main idea. Fourteen percent of the items deal with interpreting figurative language as the major task although 36% of the items make use of figurative language. The language demands are very high in the bottom 40% group. Eighty-six percent of the items are rated "high" in language demand, not only in general vocabulary but in the content areas, particularly in social studies.

In addition, the abstraction level is high, with 79% of the items dealing with abstract concepts. Literature and social studies comprise 50% each of the total. The thinking demands range from analytical to cognitive memory.

The major contrast in the top and bottom 40% P-score groups is the language level and the level of abstraction of the task demands.

The language in the bottom 40% group is difficult with 86% of the items rated "high" in language requirements as compared to the top 40% group, where language requirements are rated "high" in only 7% of the items. In addition, the vocabulary level tends to be specialized. Seventy-nine percent of the items in the bottom 40% group are rated "abstract" as compared with only 14% for the top 40% group. Examples of abstract concepts are "budgetism," the commitment of one's total monthly income to regular payments and a correlative relationship between economic and social changes. The contrast between high performance and low performance by students is illustrated by the following example:

Item C-5
(High)

You see me when I'm right to wrong;
My face I never hide.
My hands move slowly round and round
And o'er me minutes glide.

a. book
b. clock (83.7% answered the item correctly)
c. record
d. table
e. I don't know

Item D-40
(Low)

Suburbanites are not irresponsible. Indeed, what is striking about the young couples' march along the abyss is the earnestness and precision with which they go about it. They are extremely budget-counscious. They can rattle off most of their monthly payments down to the last penny; one might say that even their impulse buying is deliberately planned. They are conscientious in meeting obligations, and rarely do they fall delinquent in their accounts.

They are exponents of what could be called budgetism. This does not mean that they actually keep formal budgets--quite the contrary. The beauty of budgetism is that one doesn't have to keep a budget at all. (Only 11% answered the item correctly)

It's done automatically. In the new middle-class rhythm of life, obligations are homogenized, for the overriding aim is to have oneself precommitted to regular, unvarying monthly payments on all the major items.

Americans used to be divided into three sizable groups: those who thought of money obligations in terms of the week, of the month, and of the year. Many people remain at both ends of the scale, but with the widening of the middle class, the mortgage payments are firmly geared to the thirty-day cycle, and any dissonant peaks and valleys are anathema. Just as young couples are now paying winter fuel bills in equal monthly fractions through the year, so they seek to spread out all the other heavy seasonal obligations they can anticipate. If vendors will not oblige by accepting equal monthly installments, the purchasers will smooth out the load themselves by floating loans.

It is, suburbanites cheerfully explain, a matter of psychology. They don't trust themselves. In self-entrapment is security. They try to budget so tightly that there is no unappropriated funds, for they know these would burn a hole in their pocket. Not merely out of greed for goods, then, do they commit themselves; it is protection they want, too. And though it would be extreme to say that they go into debt to be secure, carefully charted debt does give them a certain peace of mind and in suburbia this is more coveted than luxury itself.

How could "budgetism" BEST be defined'

a. buying everything on the installment plan
b. keeping careful records of income and outgo
c. deciding in advance how much will be spent each year
d. setting aside a certain amount each month for regular expenses
e. committing almost the entire monthly income to regular payments
f. I don't know

Another point of major contrast was in the type of content used for the items. In the top 40% group, 47% of the items are of a general nature, with 47% based on literature. In the bottom 40% group, 50% are social studies items, with 50% using literature as

their base. Seventy-five percent of the lowest P-score items are social studies items.

LET Considerations:

The students did well when the language was of a general nature, the topics concrete and analytical skills were required.

The students did not do well when figurative language was used or when the vocabulary was specialized, and the level of abstraction was high.

What the Data Show

The data show that analytical skills such as the analysis of purpose and point of view, the analysis of cause and effect and part to whole relationships, and the analysis of elements and deduction of details should be emphasized by all content area teachers. In addition, the data show need for instructional emphasis on the interpretation of figurative language.

XVI. Results and Findings: Grade 11, Performance Indicator 1, "Understands Meanings of Words, Word Phrases, and Word Relationships"

Tasks Reflected in the Assessment Items

The items analyzed for this Performance Indicator reflect the following task demands: (See Appendix E)

1. Completing word relationships in analogies.
2. Using the situational (paragraph) context to determine an appropriate word.
3. Determining appropriate words from the sentence context.
4. Matching a word with a phrase or sentence which exemplifies the meaning of the word.
5. Matching a word and definition with a phrase or sentence which exemplifies the meaning.
6. Matching a meaning of a word in sentence context with a definition.
7. Matching sentence context with retranslated sentences that mean the same.
8. Recognizing an interrogative statement.

The major tasks within this Performance Indicator relate to the completing of word analogies, and the use of situational context to predict unknown words. The content is primarily of a general nature. However, specialized vocabulary, especially from science and social studies, is used in many of the word analogy items.

Analysis

The state mean for Grade 11, Indicator 1, is 63.84%. In the analysis, 52 out of 67 or 78% of the items were included. The range of P-scores in the top 40% group is 72.9% to 97.7%. The range of P-scores in the bottom 40% group is 6.0% to 59.9%. (See Appendix F)

Items on which the students did well are:

1. Determining appropriate words from the sentence context.
2. Determining word analogies when the relationships are direct.
3. Using the situational (paragraph) context to determine an appropriate word.
4. Matching a word and definition with a phrase or sentence which exemplifies the meaning.

5. Matching a word with a phrase or sentence which exemplifies the meaning of the word.

6. Matching the meaning of a word in a sentence context with a definition.

The items on which the students did well do not have high language requirements and are primarily concrete and general in nature. For the word analogy items, thinking demands require a great deal of structuring--that is, comparing and contrasting and seeing cause and effect and part-whole relationships. Other structuring demands appear in sentence context and vocabulary items. In these, students were able to relate the details into the various structures. In the bottom 40% P-score group, the students had difficulty with the following types of items:

1. Determining word analogies--synonyms.

2. Using the situational (paragraph) context to determine an appropriate word.

3. Matching a word with a phrase or sentence which exemplifies the meaning of the word.

The bottom 40% P-score group is composed of word analogies (48%) and situational context (46%) items. The major differences in the word analogies in the top and bottom 40% groups were differences in the level of abstraction and thinking. The top 40% P-score group word analogies generally required structuring direct relationships and had low language demands with no highly specialized content usage. Following is an example of this type of item:

Item D-42 see - blind hear - _____

a. talk
b. ear
c. deaf
d. listen
e. I don't know

The antonym relationship is direct and experienced-based. Other simple words and analogies and similar direct relationships required structuring, rather than multiple analogies required of the more difficult word analogies. An example of a direct relationship such as synonym or comparative relationships follows:

Item A-19 dirty - filthy pretty - _____

a. sad
b. happy
c. ugly
d. beautiful
e. sweet
f. I don't know

An analogy in the bottom 40% P-score group follows:

Item B-15 anecdote - narrator portrait - _____

a. actor
b. camera
c. novelist
d. picture
e. painter
f. I don't know

Many students selected "picture" as the answer, a relationship based on the identification of a synonym. Language and vocabulary levels are also factors in the bottom 40% word analogy items, such as the following:

Item C-41 indigo - blue vermilion - _____

a. green
b. purple
c. yellow
d. red
e. I don't know

Item C-40 opaque - transparent obscure - _____

a. solid
b. hidden
c. lucid
d. translucent
e. I don't know

The items above are opposed to the following type of items in the top 40% P-score group:

Item A-16 album - photo garage - _____

a. car
b. house
c. park
d. full
e. store
f. I don't know

Item D-43 gun - holster bulb - _____

a. onion
b. on
c. tulip
d. socket
e. I don't know

LET Considerations:

The students did well when the language requirements were low and the content concrete and general in nature. The students also did well on analytical tasks requiring direct relationships and literal comprehension.

The students did not do well when the vocabulary and abstraction levels were high, related to special content areas, and when they had to undergo multiple mental steps in order to respond analytically.

What the Data Show

The data show that the use by students of analogical reasoning should be emphasized by all teachers, as well as the effective use of context clues in reading within the paragraph.

XVII. Results and Findings: Grade 11, Performance Indicator 2, "Demonstrates a Positive Attitude Toward Reading; Reads a Variety of Reading Materials for Various Purposes"

Tasks Reflected in the Assessment Items

The items for this indicator do not reflect a "correct" answer. The students were asked to respond by choosing materials, participating in a personal interview and answering "paper and pencil," multiple choice tasks. The general areas reflected are as follows:

Group test A-D (See Appendix E)

1. Degree of enjoyment of reading in school or during one's own spare time.

2. Amount of time spent reading daily.

Individual interview E-F

1. Deciding which pictures represented people who were interested in books.

2. Selecting topics about which students enjoyed reading.

3. Categorizing reading activities into "likes," "dislikes," and "don't know" groups.

Analysis

The state mean for Grade 11, Indicator 2, is 52.73%. In packages A-D, the students responded to the following three multiple choice questions: (See Appendix F)

Item A-1 Do you enjoy reading during your spare time?

a. very much
b. much
c. little
d. very little
e. not at all

Item A-2 Do you enjoy reading during school time?

a. very much
b. much
c. little
d. very little
e. not at all

Item A-3 When you are not in school, about how much time do you spend reading books, paperbacks, magazines, newspapers, and other materials each day.

a. none
b. about 5 minutes
c. about 30 minutes
d. about one hour
e. more than one hour

Students expressed the following attitudes toward reading:

In school:

31.5% - much to very much
68.4% - little to none

During their spare time:

43.7% - much to very much
57.3% - little to very little

When not in school:

16.2% - less than 5 minutes
83.0% - 30 minutes to more than one hour

The results indicate that, consistent with the 8th grade responses, students dislike reading in school. Sixty-eight and four-tenths percent of the students expressed that they enjoy reading in school "little to very little." Also, 57.3% of the students indicated that they spend more than 30 minutes a day reading.

In packages E-F, the types of materials the students indicated they liked to read are, in the order of preferences:

1. Literature
2. Social interests
3. Social science
4. Natural science

Within the literature category, the most popular types of reading are "adventure" (21.2%), romance (27.8%), archaeology, science fiction, and the Occult (19.8%).

In another task, the students indicated what they liked to do and what they didn't like to do. The interview was structured so that 21 non-reading activities were possible selections of the student, with six reading activities included as options within this listing. Of the options, newspapers were selected 44.5% of the time and books 4.3%.

The students indicated they like to read:

1. Newspapers (44.5%)
2. Magazines (23.0%)
3. Letters (17.3%)

The students indicated that they don't like to read:

1. For information (2.7%)
2. Books (4.3%)
3. Comic books (8.2%)

Forty-four and one-half percent of the students selected newspapers as material they like to read most. Reading magazines (23.0%) followed as the second selection. Reading "for information" was the most disliked task, with a P-score of 38.8% and "read a book" was also low with 31.8% P-score. Only 4.3% selected "reading a book" and 2.7% selected "looking for information" as an activity which they liked.

In the "why students read" portion of the assessment, reading for facts and information was selected 84.8% of the time. Eighty and six-tenths percent indicated reading for fun, interest and enjoyment as reasons for reading. The results for all nine options are, in rank order:

1. Looking for facts and information.
2. Interesting and fun.
3. Being better informed.
4. Learning how to do things.
5. Learning about other people.
6. Making good use of time.
7. Understanding myself.
8. Looking better.
9. Making up my mind.

The results indicate that of the four lowest items, three relate to self-improvement. The lowest relates to reading as an aid to decision-making. The top items seem to stress learning rather than improving oneself through reading.

What the Data Show

The data show that reading in school should be made more pleasurable, no matter what the purpose or reason.

XVIII. Results and Findings: Grade 11, Performance Indicator 3, "Locates and Uses Reading Resources Effectively"

Tasks Reflected in the Assessment Items

The assessment items analyzed for this Performance Indicator reflect the following task demands: (See Appendix E)

1. Knowing the card catalog--classification system, author, letter determination, subject matter, determining all numbers, title, and alphabetizing.

2. Using the table of contents.

3. Using the television guide to determine length of program, rerun, and time.

4. Using the glossary--function, location.

5. Using the index to determine page.

6. Knowing how fictional works are arranged on the library shelves.

7. Knowing the definition of fiction.

8. Using the newspaper--locating a type of article.

9. Knowing what an autobiography is.

The content area drawn upon for the test item is primarily social studies (38%). Other areas tested are general topics, reference skills, science, and literature.

Analysis

The state mean for Grade 11, Indicator 3, is 70.69%, a high mean P-score. Only six items are below the 50% P-score level. These items comprise only 15% of the total number of items. This 15% group was used in the analysis to identify need for improvement. The scores in this group range from 30.5% to 50.3%. The scores in the top 40% group range from 76.5% to 95.8%. (See Appendix F)

Items on which the students did well are:

1. Using the table of contents to find pages, listings, contents, and locations.

2. Using the index to find page number and location of topics.

3. Using the television guide to determine the time of given program and overlapping programs.

4. Knowing about the glossary, location and definition.

5. Using the card catalog to determine author and title.

6. Knowing the term "autobiography."

7. Knowing which section a particular article might be found in the newspaper.

In the bottom 15% group, the following items were included:

1. Knowing parts of the card catalog:

   a. call number
   b. title card
   c. fiction or non-fiction books
   d. alphabetizing of cards

2. Knowing how fiction books are arranged on library shelves:

   a. alphabetically by author's last name

3. Applying the definition of non-fiction and fiction.

4. Knowing sources of information by type or writing forms (essay).

The students did very well overall. Many of the tasks (41%) are actual applications of knowledge or skills. In contrast, only 17% of the tasks in the bottom 40% group require application.

Social studies content was used 44% of the time in the bottom 20% group. Only 14% were social studies items in the top 40% group.

The students did not do well in specialized sources of information such as the thesaurus, almanac, Reader's Guide, and atlas.

LET Considerations:

The students did well when the language level was low, the topics concrete and applicable to familiar situations, and recall and recognition thinking levels were required.

The students did not do well when the tasks were outside their immediate knowledge and experience.

What the Data Show

The data show that all teachers should reinforce skills necessary to make effective use of a variety of sources of information, such as the card catalog, the Reader's Guide, atlas, almanac and thesaurus. In addition, the data show that greater use of the library should be encouraged to enable students to acquire greater familiarity with how books are arranged on library shelves.

XIX. Results and Findings: Grade 11, Performance Indicator 4, "Follows Written Directions"

Tasks Reflected in the Assessment Items

The task demands reflected by the test items used in the analysis are:

1. Following written directions on a city model; locating various stores, shops, hotels, street names and signs.

2. Reading rules of a card game and answering questions related to the rules.

3. Following written directions in a simple experiment.

4. Following written directions in a sequence to use a copy machine.

5. Drawing a combination of geometric figures.

The following tasks were part of the test but were not used in the analysis:

1. Writing words on a line and connecting dots.

2. Opening a combination lock.

3. Filling a job application form.

4. Writing numbers in the appropriate geometric figure.

Analysis

The state mean for Grade 11, Indicator 4, is 78.18%. The tasks required the student to read directions and then to perform a task. The students did very well in the two tests, with no item lower than a P-score of 56.1%. (See Appendix F)

The students did well when the sequential tasks were discrete and when they had something tangible to manipulate. The students had greater difficulty in following directions which were abstract, and where a step was dependent upon the previous steps. For example, item 11E-54-59 below has more discrete steps and requires actual handling of the materials.

Item 11E-54-59

54. Pour one ounce of vinegar into the empty bottle. Cover the bottle with the cork and set it aside.
55. Place the tissue on the table in front of you.
56. Carefully pour the baking soda on the tissue.

57. Roll up the tissue into a little package.
58. Put the package into the bottle and push the cork gently into the mouth of the bottle.
59. Take five steps away from the bottle.

Item 11F-47-53, on the other hand, consists of steps which are progressively related and where no actual handling of materials is involved.

47. Your Rock band has a gig schedule at 9 p.m. at the Warehouse on First Street between A and B Avenue.
48. Your watch says it's 5:30 p.m. You have just enough time for a snack. Park your car in front of the YMCA-YWCA on A Avenue and Second Street.
49. Walk across the King's Palace ground to the Snack Bar on B Avenue for a quick meal.
50. Your part-time cleaning job at the Y usually takes you two hours. You return to the Y by 6 p.m.
51. After you have finished cleaning the Y, take a shower in the P.E. Department at the Y, then drive to the Rent-A-Tux Shop on the corner of D Avenue and First Street. Since this is the first time you're playing with this band, you must rent a band outfit.
52. Drive to the hotel on the corner of C Avenue and Third Street, using the C Avenue entrance into the parking lot to pick up the bass player whose car is in the hotel garage.
53. Drive to the Warehouse through the quickest way possible. You need at least fifteen minutes to warm up. Park alongside the Warehouse on B Avenue.

LET Considerations:

The students did well when the content was of general nature, and where the experiences were concrete and remained at the recall and recognition level of thinking.

What the Data Show

The data show that, for this grade level, instruction (by all content area teachers) should emphasize the following of complex directions based on numerous steps to be followed in sequence.

XX. Results and Findings: Grade 11, Performance Indicator 5, "Gets the Main Idea and Supportive Details from a Selection"

Tasks Reflected in the Assessment Items

The items analyzed for this Performance Indicator reflect the following task demands: (See Appendix E)

1. Recognizing and recalling details.
2. Inferring main ideas.
3. Identifying main ideas.
4. Identifying chronological pattern.
5. Generalizing from details.
6. Interpreting figurative language.
7. Retranslating details.

Seventy-five percent of the items are almost identical with the 8th grade test items. An additional two items require identifying main ideas. Most of the items require recognizing or recalling details. Social studies items are the most prevalant, along with general topics.

Analysis

The state mean for Grade 11, Indicator 5, is 76.83%. In general, the students in the 11th grade did well in this category, as performance on only one item fell below the 50% P-score level. (See Analysis Grade 8, Indicator 5)

In the top 40% P-score group, the students did well in:

1. Recalling and recognizing details.
2. Retranslating details into other words meaning the same.
3. Generalizing from details when the language requirements were low and the experience concrete.

LET Considerations:

The students did well when the content was general, concrete and vicarious, and the thinking involved recall-recognition and convergence.

The students had difficulty when the language requirements were high, the content specialized and abstract, and inferential thinking processes were required.

What the Data Show

The data show that such skills as inferring main ideas (both explicit and implicit), identifying chronological order, and comparing and contrasting should be emphasized.

XXI. Results and Findings: Grade 11, Performance Indicator 6, "Demonstrates that the Student Can Read a Variety of Materials (Graphs, Tables, Charts) for Various Purposes"

Tasks Reflected in the Assessment Items

The items analyzed for this Performance Indicator reflect the following task demands: (See Appendix E)

1. Reading a map to determine route and proximity.

2. Reading a report card using the legend to determine the reporting period and performance in a particular subject.

3. Reading a graph to analyze relationship of elements, and to deduce conclusions.

4. Reading street signs.

5. Using a time schedule to determine which appointments can be met.

The topics are of a general nature, with the graph and map items relating to social studies.

Analysis

The state mean for Grade 11, Indicator 6, is 75.25%. The students did well on this indicator with only two items falling below the 50% P-score level. Due to the relatively small number of items and the high P-score, 60% of the top 40% P-score group were analyzed. The items in the top 60% P-score group include: (See Appendix F)

1. Knowing proximity, routes, and directionality.

2. Reading street signs.

3. Reading a report card using the legend, determining the reporting period and performance in a particular subject.

In the bottom 20% P-score group, the students had difficulty with:

1. Reading a graph with three axes and analyzing the relationship to deduce a conclusion.

2. Using a chart to analyze time conflicts.

There are some major contrasts between the top P-score group and the bottom P-score items. The items in the top P-score group require primarily recall and recognition of details, with some convergent thinking. The bottom P-score items, on the other hand,

require analytical thinking skills above and beyond graphic information which is provided. Abstract conceptual level items are used, while many of the top 40% P-score group items deal with concrete experiences. The language demands do not seem to be a major variable, for some of the street signs used difficult terms.

LET Considerations:

The students did well when the sentence patterns and vocabulary were simple, the task concrete and thinking tasks remained at the recall and recognition levels.

The students had difficulty when the vocabulary was specialized, the tasks were abstract and inferential, convergent and analytical thinking was required.

What the Data Show

The data show that the interpretation of charts and graphs should be emphasized, especially in such subject areas as social studies, science, mathematics, and vocational-technical education courses.

XXII. Results and Findings: Grade 11, Performance Indicator 7, "Demonstrates that the Student Can Read Critically"

Tasks Reflected in the Assessment Items

The items analyzed for this Performance Indicator reflect the following task demands: (See Appendix E)

1. Inferring the main idea.
2. Interpreting figurative language for meaning.
3. Analyzing relationships--cause and effect.
4. Retranslating detail.
5. Analyzing point of view.
6. Expressing the main idea in other words.
7. Analyzing the accuracy of statements.

Analysis

The state mean for Grade 11, Indicator 7, is 54.36%. The range of scores in the top 40% P-score group is from 14.8% to 45.2%. In the top and bottom 40% P-score groups, the items are identical to Grade 8, Indicator 7, except for two additional items relating to inferring main ideas. (See Appendix F)

The students did well on the following tasks:

1. Interpreting figurative language for meaning.
2. Retranslating detail.

There are marked differences between the top and bottom 40% group in language demands, levels of abstraction and content areas drawn upon, particularly social studies and literature. When the complexity of language and the abstraction level rose, P-scores declined, especially on items from social studies.

What the Data Show

The data show that activities requiring analytical thinking should be emphasized in all content areas to improve the students' ability to identify relationships, to note the author's purpose, to grasp the tone of a selection, to interpret figurative language, and to infer main ideas.

XXIII. Statewide Analysis and Summary

The following summary is based primarily on an analysis of identical items which were included in all three grade levels and a comparison of State Mean P-values in packages A-D.

Indicator 1: Word Relationships

The students performed "fairly" on this indicator in relation to their performance on other indicators. The 11th grade achieved the highest mean scores, which was a trend throughout. (See Appendix D). The 8th grade results indicate that the 8th graders did more poorly on this indicator when P-scores were compared. However, it should be noted that in the 8th grade, test items are much more difficult in construction and task demands and items varied widely on content between the 4th and 8th grade tests. Also, when identical items in grades 4, 8, and 11 were compared, (See Appendix G) the students in the upper grade always did better than the preceding grade. The median score for 4th grade was 36.9, for the 8th grade, 70.4, and for the 11th grade, 83.1.

For the 4th grade items, (36.9) the P-scores for the 8th on the identical items are 74.8 and 88.7 in the 11th grade.

Although mean P-values increased with grade levels, improvement in vocabulary skills and the use of situational contexts seem warranted.

Indicator 2: Positive Attitude

Indicator 2 items were not "correct" or "incorrect" but sampled the opinions of students about attitudes toward reading. The students in the 4th grade indicated a positive attitude toward reading in school (60.7) and at home. However, only 35.2 in the 8th grade and 31.5 in the 11th expressed a positive attitude toward reading in school. An average of 76% of the students, however, said that they read 30 minutes or more outside of school. All items are identical in the A-D packages for all three grade levels. The assessment indicates that students read both in school and out of school. It appears, however, that assigned or study type reading is disliked. Reading for pleasure or fun could receive greater emphasis.

Indicator 3: Locates and Uses Reading Resources Effectively

Overall, the students performed "fairly" on this indicator. However, there are clear differences by grade level. (See Appendix G). The 4th grade students performed poorly, with a median score of 33.6 on items appearing in all three grade levels. The 8th grade median is 61.0 and 11th grade, 77.6. When means are compared, they are as follows:

4th Grade	38.1
8th Grade	61.0
11th Grade	78.2

Indications are that the 4th grade students have received little instruction in the use of sources of information. Though the P-value rose with the grade level, the 8th grade and 11th grade students experienced difficulty with specialized sources of information and with reference materials.

Indicator 4: Follows Written Directions

In general, the 4th grade students experienced difficulty with this indicator but the 8th and 11th grade students did very well. On the individually-administered items, all the students performed well. Of the items which appeared in all three levels, the median scores are:

4th Grade	33.0
8th Grade	71.2
11th Grade	79.1

The mean P-scores are:

4th Grade	33.0
8th Grade	80.6
11th Grade	85.6

Indicator 5: Gets the Main Idea

The trend was similar to Indicator 3, where each grade level scored progressively better. (See Appendix G). The median score for the 4th grade is 25.8, for the 8th grade, 61.6 and for the 11th grade, 83.2. On the identical median item the scores are for grade 4, 25.8; for grade 8, 48.3 and grade 11, 80.0. The items for this indicator are quite uniform. A major problem which consistently emerged is that of inferring main ideas. It seems that literal comprehension posed no major problem at all grade levels. Again, as abstraction levels, higher thinking skills and language demands increased, the items posed problems for the students at all grade levels.

Indicator 6: Demonstrates That He Can Read a Variety of Materials

The students generally did well on the Performance Indicator. Many of the tasks require literal comprehension and utilize commonly experienced activities or events. The items the students did poorly on require analytical thinking skills and are in the format of graphs. Abstract map skills such as orientation and directionality posed more problems than distance and relative positions. Appendix F suggests that, in general, the 4th grade students did better than the 8th or 11th grade students. In reality, however, the 8th and 11th grade test items require knowledge of more analytical and specialized charts and graphs. Upon examination of the median scores of items appearing in all three grade levels, the trend of higher median scores by grades continues. The median score for the 4th grade is 69.9, for the 8th grade, 86.4 and for the 11th grade, 92.8.

Indicator 7: Demonstrates That He Can Read Critically

Tasks on this indicator posed the most difficulties for the students. There is a heavy emphasis on figurative language. Many items deal with abstract social studies concepts. The performance on this indicator may be labeled "poor to fair." On this indicator, the abstraction levels, language requirements and thinking skills are especially high. The median score for the 4th grade is 14.7, for the 8th grade, 32.5 and for the 11th grade, 59.5.

This indicator assumes knowledge of content area concepts and understanding of figurative language, particularly in poetry.

General Observations

1. Students did better on literature items, rather than social studies and science.

2. The students liked to read narrative materials more than expository.

3. Students did better on general everyday content than literature.

4. Students did better in practical concrete applications than abstract or vicarious "read and answer" tasks.

5. Students had problems with figurative language, particularly in poetry.

6. Students had problems in analysis and analytical tasks, as opposed to recall and recognition tasks.

7. As the demands of language (vocabulary and sentence complexity), abstract thinking, and other forms of thinking rose, the P-scores declined. The students had difficulty inferring main ideas and seeing relationships among details, such as cause and effect, part-to-whole and comparing and contrasting.

8. In general the 11th grade students did best overall, on all indicators. (See Appendix G)

9. Students in the 4th and 8th grades are not familiar with the use and knowledge of information sources; upper grade students are not familiar with specialized information and reference sources.

10. Students in the 4th grade expressed positive attitude toward reading in school but students in the 8th and 11th grades expressed a negative attitude toward reading in school.

Closing Comments

It is difficult on the data alone to determine cause and effect. For instance, if the students had difficulty on items requiring analytical thinking, does this mean that analytical thinking is not being taught? If it is taught, can one assume analytical thinking will result? Is it that the children are being taught recall and recognition, and if analytical thinking were to be emphasized, would this mean that recall and recognition skills will decline? A report such as this cannot answer these questions. The questions can only be answered at the school level.

As each school engages in program improvement efforts, the faculty can determine the extent to which the report facilitates the planning and development of appropriate and sound improvement strategies in relation to the learner, curriculum and the teacher.

APPENDICES

APPENDIX A

ASSESSMENT ITEM NUMBERS BY PERFORMANCE INDICATORS AND GRADE LEVEL

READING ASSESSMENT SPRING TESTING 1975 GROUP PACKAGES: TEST EXERCISES BY PERFORMANCE INDICATORS

GRADE 4	I			II			III			IV			V			VI			VII		
Package A	9	17		1			8			24			5	33		4			22		
(1-37)	10	18		2			19			25			6			7			23		
	11	20		3									16			21			26		
	12	35											27						29		
	13	36											28						30		
	14	37											31						34		
	15												32								
Package B	1	10					13			21			3			8			13	34	
(1-40)	2	11					14						32			16			15	36	
	4	37					23						33			17			22		
	5	38					24						35			18			28		
	6	39					25									19			29		
	7	40					26									20			30		
	9						27												31		
Package C	2	21					9			27			7			1			11		
(1-33)	3	31					12						24			8			17		
	4	32					13						25			10			18		
	5	33					14						26						22		
	6						15						28						23		
	19						16						30						29		
	20																				
Package D	1	41					14	22		7			3			2			13		
(1-42)	4	42					15	30					8			12			23		
	5						16	31					25			38			24		
	6						17	32					35						26		
	9						18	33					36						27		
	10						19	34					37						28		
	11						20												29		
	40						21												39		

KEY: I-VII = READING PERFORMANCE INDICATORS

READING ASSESSMENT SPRING TESTING 1975 INDIVIDUAL PACKAGES: TEST EXERCISES BY PERFORMANCE INDICATORS

GRADE 4	I	II	III	IV	V	VI	VII
Package E		7	1 28	15 41	14		
(1-54)		8	2 29	16 42			
		9	3 30	17 43			
		10	4 31	18 44			
		11	5	19 45			
		12	6	32 46			
		13	20	33 47			
			21	34 48			
			22	35 49			
			23	36 50			
			24	37 51			
			25	38 52			
			26	39 53			
			27	40 54			
Package F		19 34	1	8 41 56	7		
(1-70)		20	2	9 42 57			
		21	3	10 43 58			
		22	4	11 44 59			
		23	5	12 45 60			
		24	6	13 46 61			
		25	14	16 47 62			
		26	15	17 48 63			
		27		18 49 64			
		28		35 50 65			
		29		36 51 66			
		30		37 52 67			
		31		38 53 68			
		32		39 54 69			
		33		40 55 70			

KEY: I-VII = READING PERFORMANCE INDICATORS

READING ASSESSMENT SPRING TESTING 1975 GROUP PACKAGES: TEST EXERCISES BY PERFORMANCE INDICATORS

GRADE 8	I		II	III		IV	V	VI		VII	
Package A	11	45	1	5	27	17	6	4		10	38
(1-50)	14	46	2	19	28		7	9		13	39
	15	47	3	20	29		8	24		18	40
	16	48		21	30		12			31	41
	42	49		22	35		23			32	
	43	50		25			34			33	
	44			26			37			36	
Package B	1	14		9	30	7	8	3	43	10	42
(1-48)	2	15		17	31	28	29	11		16	
	4	44		18	32		35	23		33	
	5	45		19			36	24		34	
	6	46		20			39	25		37	
	12	47		21			40	26		38	
	13	48		22				27		41	
Package C	2	44		6	15	25	22	1		5	37
(1-50)	3	45		7	16		24	11		10	38
	4	46		8	17		26	21		23	39
	29	47		9	18		27	28		31	40
	41	48		12	19		30			34	
	42	49		13	20		32			35	
	43	50		14			33			36	
Package D	2	46		7	19	11	6	1		13	40
(1-51)	3	47		8	20	12	21	5		23	41
	4	48		9	24		33	14		25	
	27	49		10	26		35	22		31	
	42	50		15	28		36			32	
	43	51		16	29		37			34	
	44			17	30					38	
	45			18						39	

KEY: I-VII = READING PERFORMANCE INDICATORS

READING ASSESSMENT SPRING TESTING 1975 INDIVIDUAL PACKAGES: TEST EXERCISES BY PERFORMANCE INDICATORS

GRADE 8	I	II	III	IV	V	VI	VII
Package E		14 28	1 58	36 50 67	30		
(1-78)		15 29	2 59	37 51 68	31		
		16	3	38 52 71	32		
		17	4	39 53 72	33		
		18	5	40 54 73	34		
		19	6	41 55 74	35		
		20	7	42 56 75	64		
		21	8	43 60 76	70		
		22	9	44 61 77			
		23	10	45 62 78			
		24	11	46 63			
		25	12	47 64			
		26	13	48 65			
		27	57	49 66			
Package F		14	1 51 66	21 36 81	37		
(1-85)		15	2 52 67	22 39 82	38		
		16	3 53 68	23 40 83	70		
		17	4 54 69	24 41 84	71		
		18	5 55	25 42 85	72		
		19	6 56	26 43	73		
		20	7 57	27 44	78		
			8 58	28 45	79		
			9 59	29 46	80		
			10 60	30 47			
			11 61	31 48			
			12 62	32 74			
			13 63	33 75			
			49 64	34 76			
			50 65	35 77			

KEY: I-VII = READING PERFORMANCE INDICATORS

READING ASSESSMENT SPRING TESTING 1975 GROUP PACKAGES: TEST EXERCISES BY PERFORMANCE INDICATORS

GRADE 11	I			II			III			IV			V			VI			VII		
Package A	5	29	48	1			6	36		10			12			4			9	44	
(1-49)	16	30	49	2			7	37		11			13			15			27	45	
	17	31		3			8	38					14			40			34		
	18	32					22						21						35		
	19	33					23						26						39		
	20	46					24						41						42		
	28	47					25												43		
Package B	1	18	46				4	11		24			12			20			23	42	
(1-46)	2	25					5	30					13			35			36		
	3	26					6	31					19						37		
	14	27					7	32					21						38		
	15	43					8	33					22						39		
	16	44					9	34					28						40		
	17	45					10						29						41		
Package C	2	22	42				9			10			13	35		1			20		
(1-47)	3	23	43				26			11			14			8			21		
	4	24	44				27			12			15			19			31		
	5	25	45				28						16			30			34		
	6	39	46				29						17						36		
	7	40	47										32						37		
	18	41											33						38		
Package D	1	43					3	30		11			12			15			2	41	
(1-50)	4	44					10	31					13			16			27		
	5	45					20	33					14			17			34		
	6	46					21						24			18			36		
	7	47					22						25			19			37		
	8	48					23						32			28			38		
	9	49					26						35						39		
	42	50					29												40		

KEY: I-VII = READING PERFORMANCE INDICATORS

READING ASSESSMENT SPRING TESTING 1975 INDIVIDUAL PACKAGES: TEST EXERCISES BY PERFORMANCE INDICATORS

GRADE 11	I	II	III	IV	V	VI	VII
Package E		23	1 15 32	33 49 65	60		
(1-70)		24	2 16 42	34 50 66	61		
		25	3 17 43	35 51 67			
			4 18	36 52 68			
			5 19	37 53 69			
			6 20	38 54 70			
			7 21	39 55			
			8 22	40 56			
			9 26	41 57			
			10 27	44 58			
			11 28	45 59			
			12 29	46 62			
			13 30	47 63			
			14 31	48 64			
Package F		21 36	1 16	47 66	41		
(1-71)		22 37	2 17	48 67	42		
		23 38	3 18	49 68	43		
		24 39	4 19	50	44		
		25 40	5 20	51	45		
		26	6	52	46		
		27	7	53	61		
		28	8	54	62		
		29	9	55	63		
		30	10	56	64		
		31	11	57	69		
		32	12	58	70		
		33	13	59	71		
		34	14	60			
		35	15	65			

KEY: I-VII = READING PERFORMANCE INDICATORS

APPENDIX B

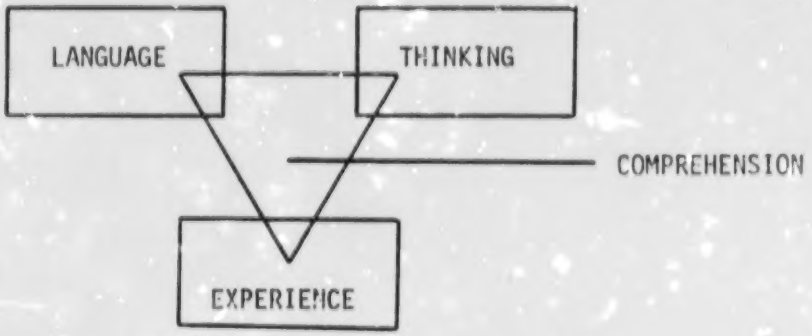
LANGUAGE, EXPERIENCE AND THINKING MODEL

THE LANGUAGE, EXPERIENCE AND THINKING MODEL

By Kenneth Yamamoto

Reading is the process of deriving meaning from the printed symbols. What meaning the reader reconstructs is dependent upon the level of language learned and understood, his experiences, and his thinking and analytical skills. If the reader knows the language of the writer, has similar experiences, real or vicarious, and is familiar with the necessary thinking operations, the probability is high that he will come close to comprehending the writer's ideas. Reciprocally, if the reader is not familiar with the writer's language, has not had similar experiences and does not process the information similarly, he will most likely not comprehend the writer's message.

Reading comprehension is the result of the interaction of language, experience, and thinking. The Language, Experience, and Thinking (LET) model is a relational model which shows the interrelationships of language, experience and thinking and how it affects the reconstruction of ideas or comprehension. Comprehension is not a singular skill but literally a process of "grasping together." It is a process resulting in a thought or integration of ideas and details, a fusion. Comprehension is, therefore, the result of the interaction of the Language, Experience, and Thinking model. Each area contributes to comprehension in varying degrees.



Language has direct relationships to comprehending:

Figure 1

LET RELATIONSHIPS

LANGUAGE	COMPREHENSION
CONCEPTUAL KNOWLEDGE	PROVIDES CONTENT, DEDUCTIVE COMPARING SITUATION
FUNCTIONS	FACILITY IN USE, UNDERSTANDING
SEMANTICS	PROVIDES VARIATIONS, INTERPRETATIONS, OPTIONS, LABELS
SYNTAX — SENTENCE, CLAUSES, PHRASES / WORD MORPHEMES	PROVIDES DECISION MAKING ON PRECISE MEANINGS, RECONSTRUCTED MEANINGS
PHONOLOGY	PROVIDES CLUES TO WORDS

The language factors on the left influence the comprehension factors on the right in the following ways:

The students do not comprehend because they:

a. may have the experience but lack the vocabulary labels in oral or written form

b. may have words which are different from the reading materials but represent the same experience

c. may not be able to understand abstract content concepts because they do not have the words to label those concepts

d. may read the materials with a different function in mind than the writer, which affects how the material is interpreted

e. may not understand sentences or predict word meanings due to syntactical miscues

Experience is the basis for language and thought development. If an individual has not experienced something, then he has no way of knowing unless he experiences it or reconstructs (thinking) a vicarious experience. Language facilitates the creation of vicarious experiences by allowing the individual to manipulate experiences symbolically. Experience is the basis for all learning--concrete, vicarious or abstract.

Figure 2

LET RELATIONSHIPS

EXPERIENCE	THINKING	LANGUAGE	COMPREHENSION
ABSTRACT/SYMBOLIC/ RECONSTRUCTED	EVALUATION	CONCEPTUAL KNOWLEDGE FUNCTIONS	MEANINGS
	DIVERGENT	SEMANTICS	
VICARIOUS	CONVERGENT	SYNTAX	
CONCRETE	STRUCTURAL		
	COGNITIVE MEMORY	PHONOLOGY	

Experience differences affect the student's comprehension because they:

1. May not be able to understand what an event, object, action or concept is or means.

2. May not know the vocabulary since they lack similar experiences upon which to learn and use oral language labels.

3. Do not have the basic knowledge and background. A learner in this situation will have to utilize a higher level of inferential thinking to create vicarious knowledge for what we assume is recall and recognition of basic information.

The third factor affecting comprehension is the thinking process.

Thinking is the process used by the reader to process the information in a meaningful way. It also serves as a process of analysis and synthesis to examine, inquire, and create. Thinking may affect reading in the following ways:

When the students read, they:

1. Do not process the information in a meaningful way.

a. details are not related
b. concepts are not generalized
c. concepts are not applied
d. concepts are not valued, cognitively and affectively

2. Do not analyze the information and ideas and synthesize them.

Comprehension is a function of the interaction of language, experience and thinking. Each contributes to the final reconstruction of an idea in varying degrees. Since reading comprehension is the result of the interaction, program improvements must focus on the process and factors contributing to comprehension. Poor performance on the assessment items are symptomatic rather than causal. In the analysis, each assessment item was analyzed for the probable effect LET factors may have had upon the students' performance.

APPENDIX C

CRITERIA FOR ANALYSIS:

LET LEVELS AND ITEMS

CRITERIA FOR ANALYSIS: LANGUAGE, EXPERIENCE AND THINKING

To determine the effect of the language, experience and thinking demands upon the performance, a set of general criteria was developed for analysis (See Appendix A) and for classification of the demands into the three categories of "high," "medium," and "low."

These criteria provide the basis for the analysis. If any factor or combination of factors appeared in the high or low P-score groups, these factors were discussed in relation to what they contributed toward the performance on an assessment task.

Criteria for "High" Language, Experience, and Thinking.

Factors

Language:
1. words representing abstract concepts
2. length of words (syllables)
3. semantic ambiguity
4. figurative language
5. complex sentence structure
   a. embedded sentences
   b. complementation
   c. nominalization

Experience:
1. abstract or urusual or experiences not usually available in the community or age level

Thinking:
1. applying concepts, ideas, procedures
2. deducing
3. analyzing elements, concepts
4. synthesizing
5. evaluating

Criteria for "Medium" Language, Experience, and Thinking.

Factors

Language:
1. vocabulary, some concrete, some abstract words
2. some high and low syllabic count
3. syntax, conjoined or combined sentences, little use of gerunds, adverbial adjective phrases, and gerunds

Experience:
1. vicarious experiences, not commonly experienced but within community and age level

Thinking:
1. structuring information
2. inferring concepts, ideas

Criteria for "Low" Language, Experience, and Thinking.

Factors	
Language:	1. vocabulary; concrete referents for words 2. low syllabic count, clear 3. simple words 4. simple sentence pattern
Experience:	1. concrete, tangible, common experiences for community and age level
Thinking:	1. recalling, recognizing details 2. identifying main ideas

CRITERIA FOR ITEM ANALYSIS

Package _____
Indicator _____
Exercise No. ____
Rating __ _____

I. Student Considerations

____ A. Language

____ 1. Semantic aspects
- ____ a. vocabulary level too difficult.
- ____ b. uncommon or unfamiliar words, common expression.
- ____ c. semantic ambiguity.
- ____ d. adequate meaning cues for task requirement.
- ____ e. figurative language, non-literal.
- ____ f. other.

____ 2. Syntactical aspects
- ____ a. word order ambiguous, confusing.
- ____ b. complex grammatical structures.
- ____ c. other.

___ 3. Functions
- ____ a. instrumental.
- ____ b. interactional.
- ____ c. imaginative.
- ____ d. heuristic.
- ____ e. regulatory.
- ____ f. representational.
- ____ g. other.

____ B. Experience

____ 1. Real or direct: in general, is this a commonly experienced activity?

____ 2. Vicarious: in general, is this a commonly discussed activity or viewed activity?

____ 3. Is this an experience which contradicts real life experiences?

____ 4. Other.

____ C. Thinking

____ 1. Is the item demanding complex or integrative thinking and inference?

____ a. divergent: application, predicting, hypothesizing.
____ b. evaluation: justifying choices.
____ c. other.

____ 2. Does the item require structuring of the data before answering?
____ a. categorization.
____ b. comparison and contrast.
____ c. sequencing, patterning.
____ d. cause and effect.
____ e. part-whole.
____ f. other.

____ 3. Is there adequate data and information to answer the question?
____ a. relies on experience.
____ b. assume experiences or previous knowledge, at an unrealistic level?
____ c. literal comprehension of detail.
____ d. other.

____ D. Values

____ 1. Are these particular values or ethical inferences counter to the children's social or cultural experience?

____ 2. Do these values influence a "right" or "wrong" answer?

____ 3. Other.

II. Test Aspects

____ A. Directions

____ 1. Are the directions clear and explicit?
____ a. language aspects.
____ b. procedurally.
____ c. positively stated.
____ d. format, placement, spatially appropriate.
____ e. other.

____ B. Foils

____ 1. How do the foils meet "student considerations" criteria?
____ a. language.
____ b. experience.
____ c. thinking.
____ d. other.

___ 2. Are the foils . . .
- ___ a. deceptive, confusing, ambiguous, misleading?
- ___ b. requiring too much discrimination, thinking?
- ___ c. requiring too little discrimination?
- ___ d. reflecting the task demand?
- ___ e. other.

___ 3. Is the correct foil . . .
- ___ a. true?
- ___ b. adequate in cues?
- ___ c. other.

___ C. Items

___ 1. Does the item measure what is proports to measure within the indicator category? Is the task appropriate?

___ 2. Does the construction of the task lead to an accurate evaluation of the objective?

___ 3. Other.

___ D. What content or knowledge area is being used as a medium?

___ 1. science:

___ 2. social studies:

___ 3. math:

___ 4. literature:

___ 5. music:

___ 6. art:

___ 7. general:

___ 8. other:

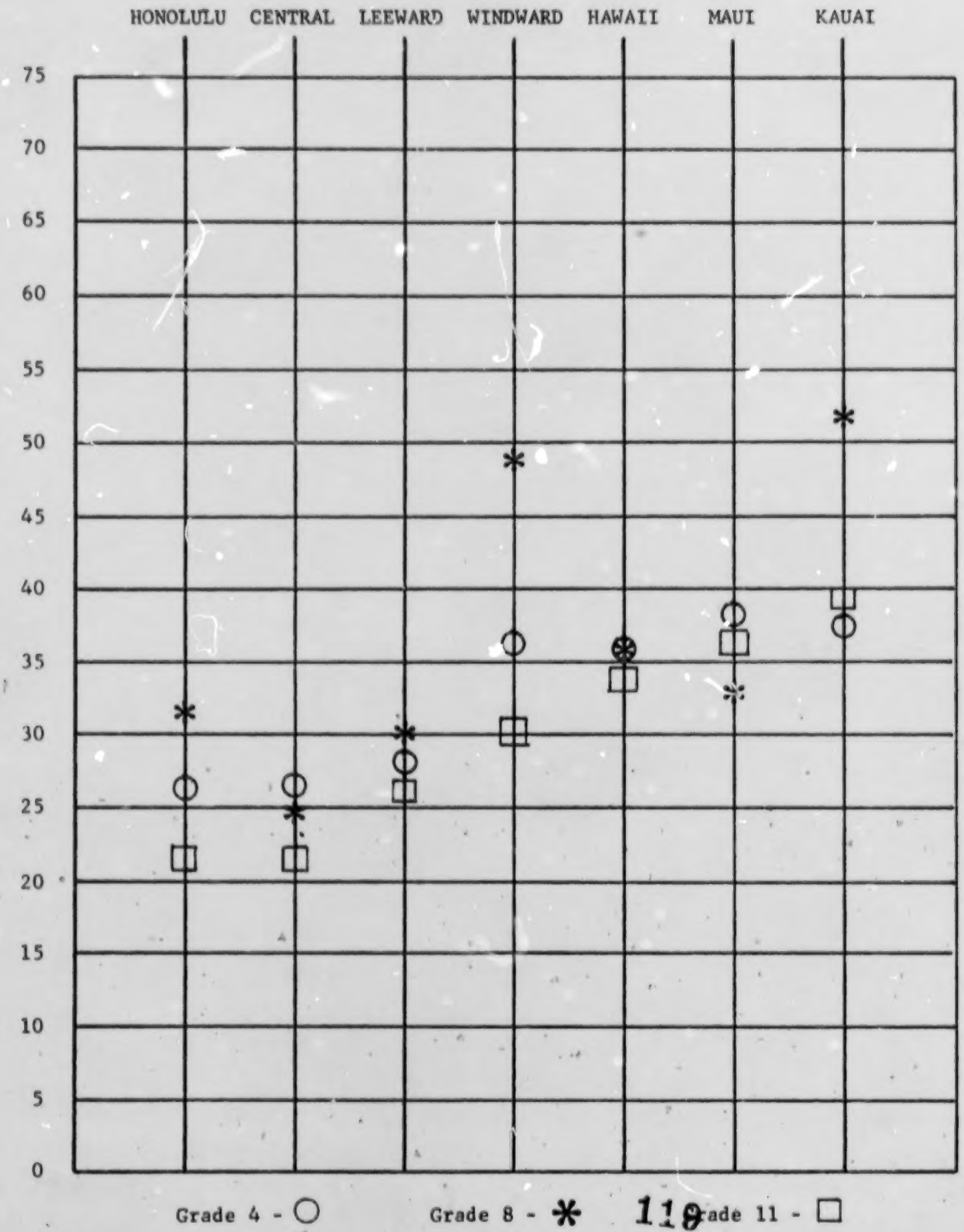
APPENDIX D

PERCENTAGE OF ITEMS BELOW 50% P-SCORE IN PERFORMANCE

Percentage of Items Below 50% P-Score in Performance Indicator 1

Grades 4, 8, & 11

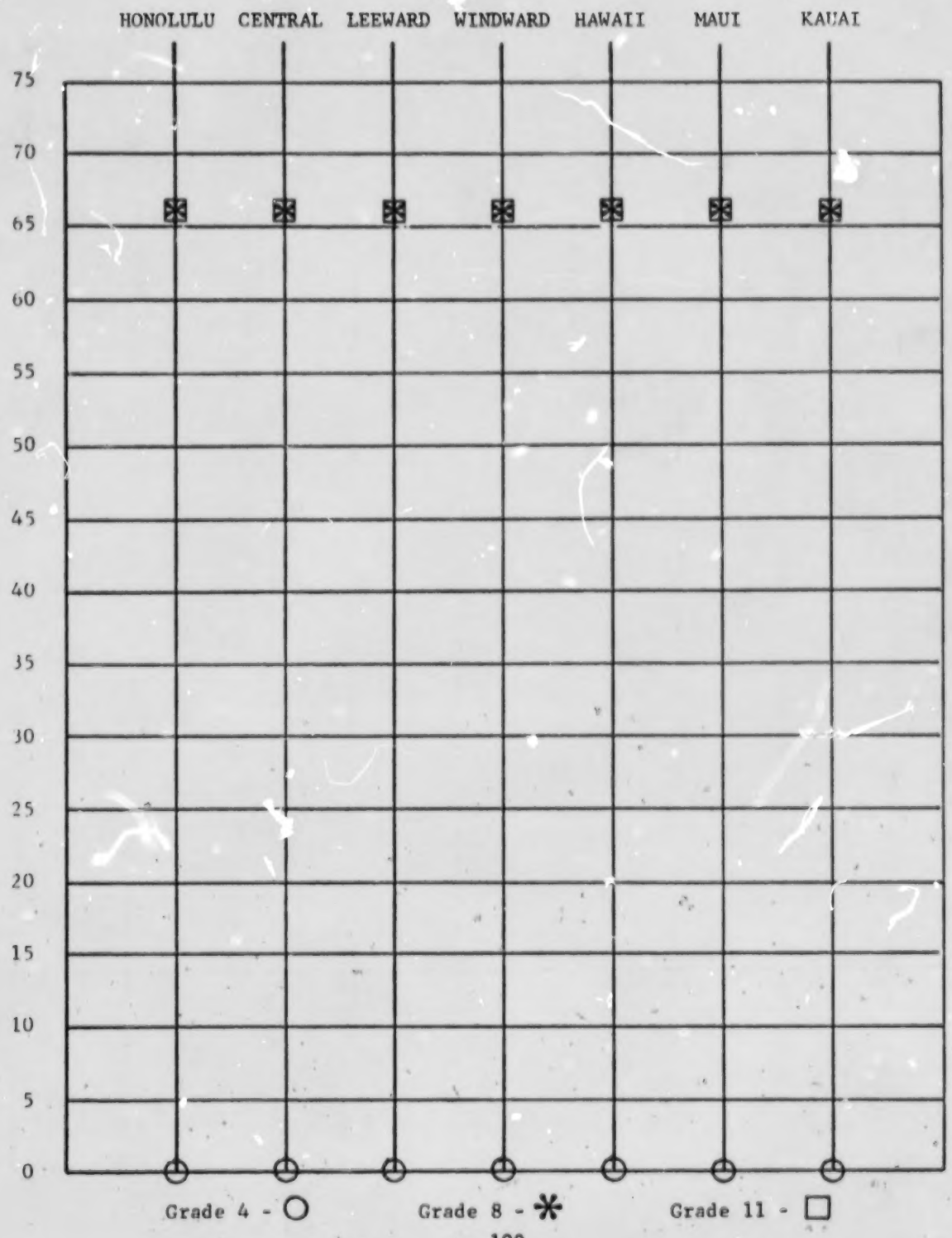
Table 8-1



Percentage of Items Below 50% P-Score in Performance Indicator 2

Grades 4, 8, & 11

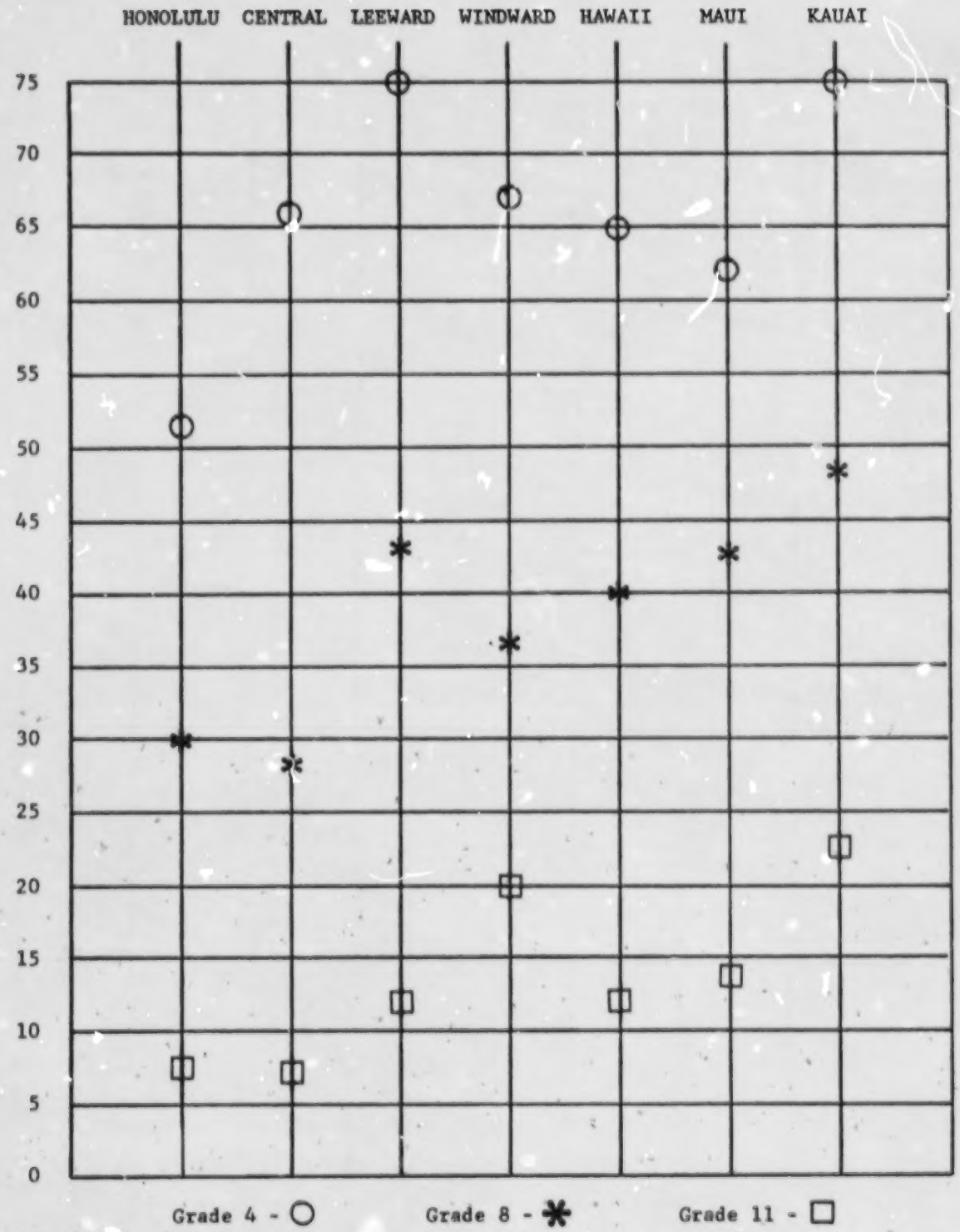
Table 8-2



Percentage of Items Below 50% P-Score in Performance Indicator 3

Grades 4, 8, & 11

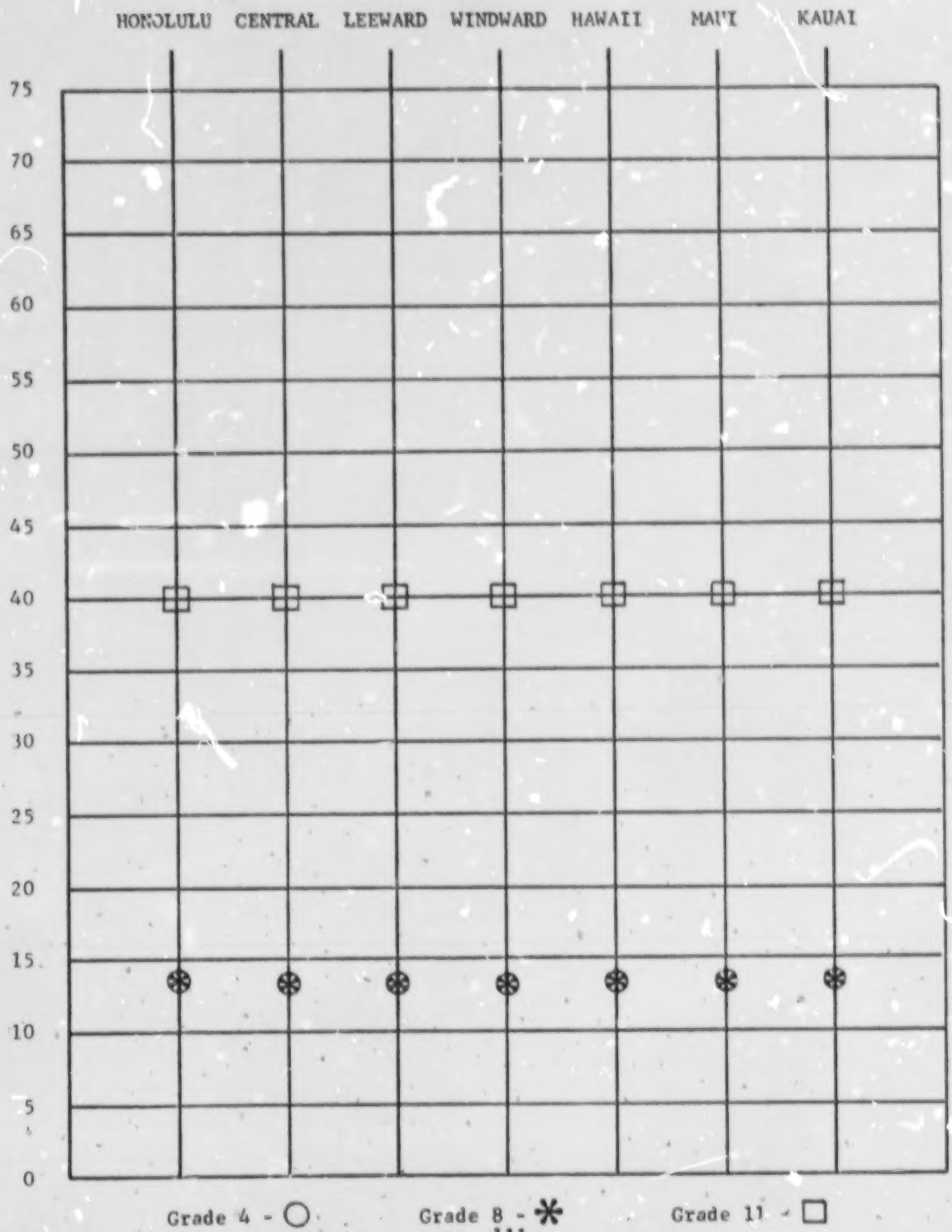
Table 8-3



Percentage of Items Below 50% P-Score in Performance Indicator 4

Grades 4, 8, & 11

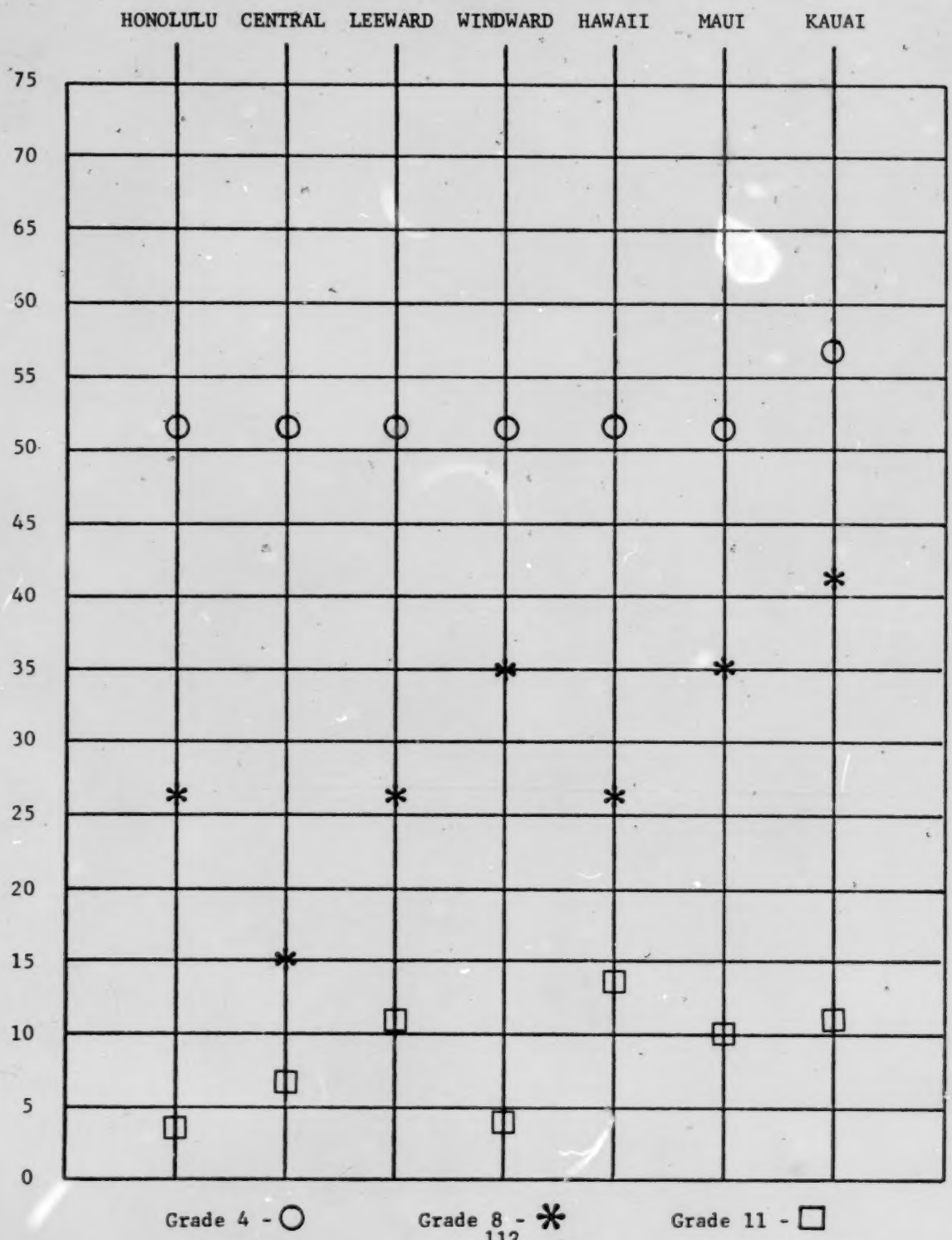
Table 3-4



Percentage of Items Below 50% P-Score in Performance Indicator 5

Grades 4, 8, & 11

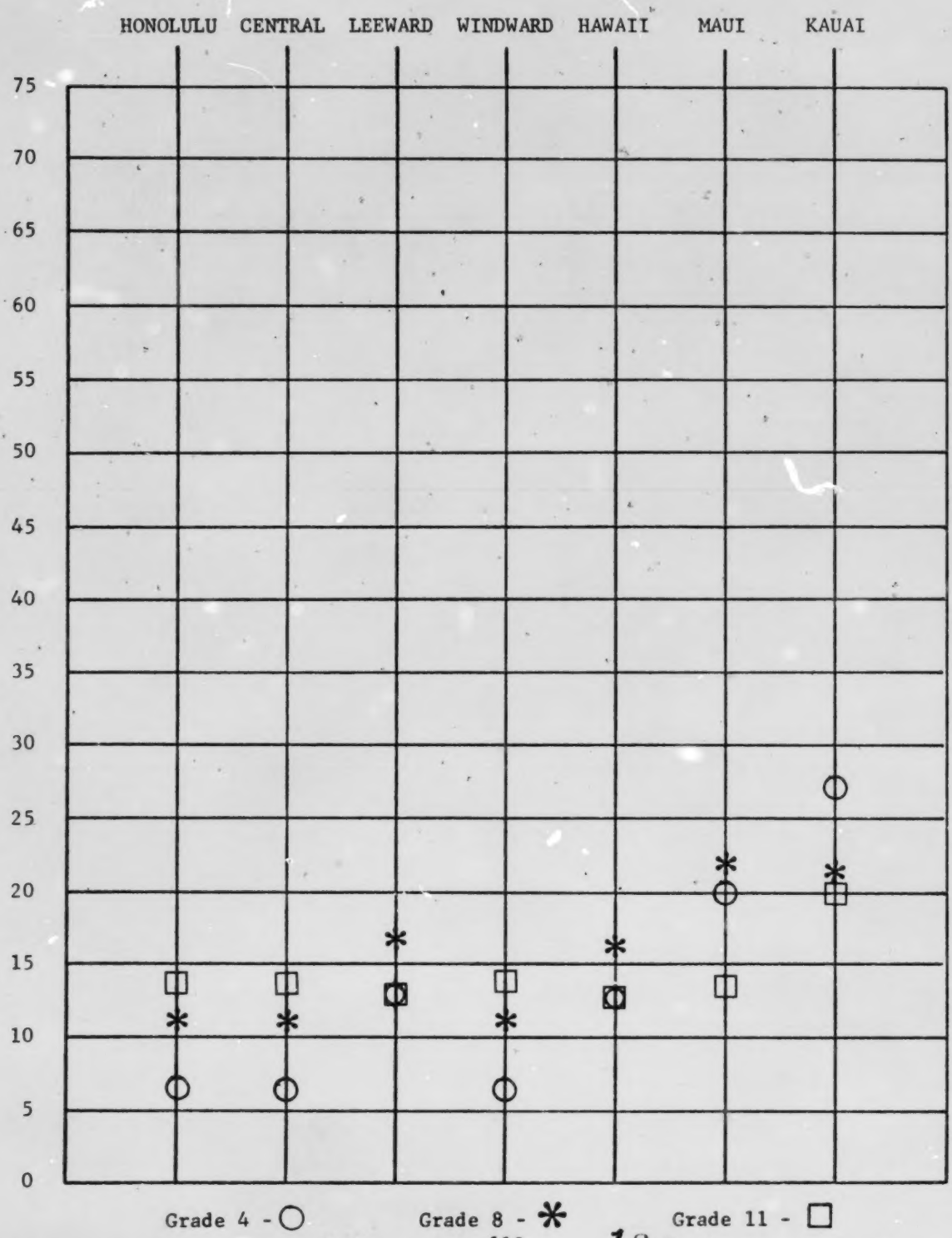
Table 8-5



Percentage of Items Below 50% P-Score in Performance Indicator 6

Grades 4, 8, & 11

Table 8-6



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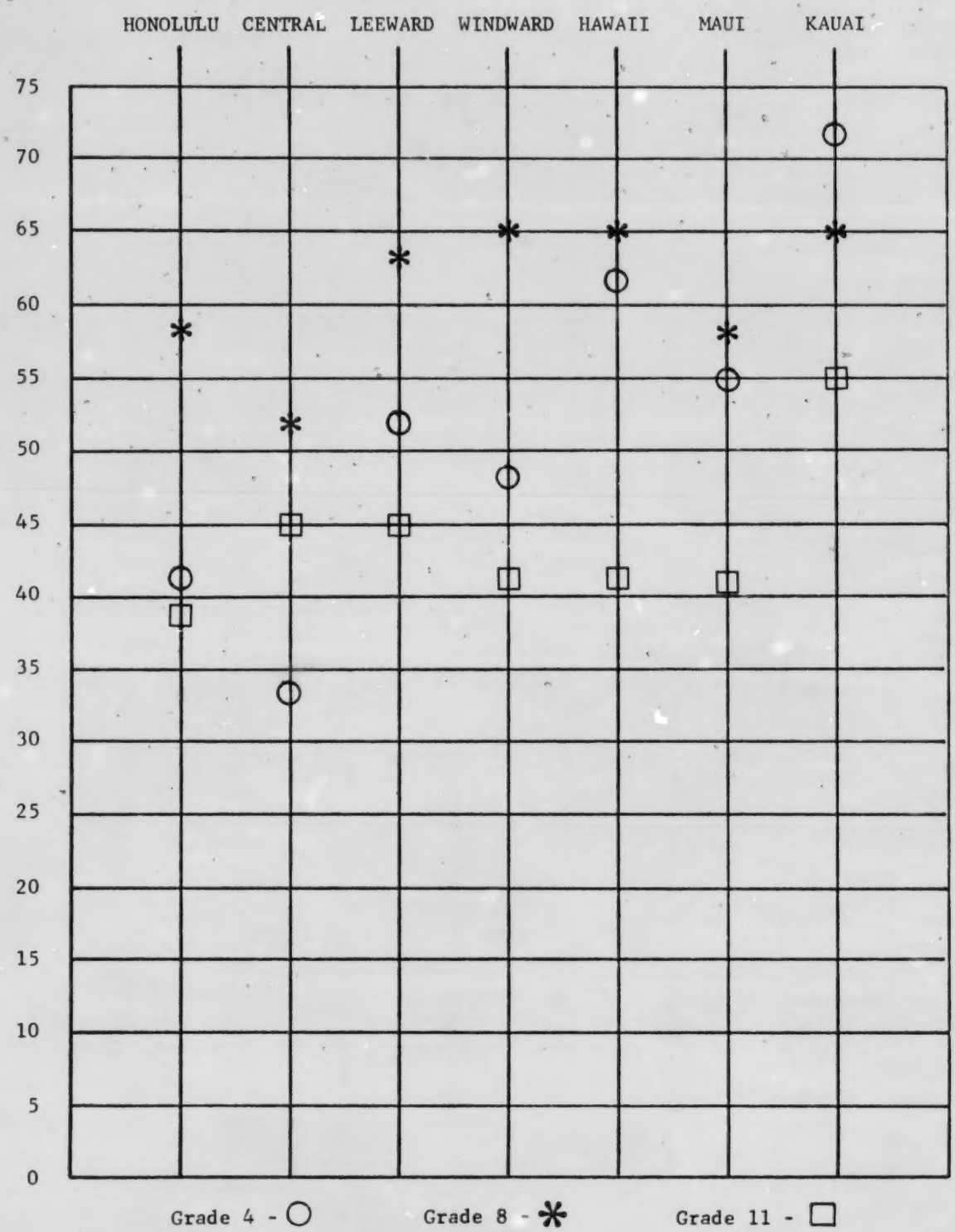
Percentage of Items Below 50% P-Score in Performance Indicator 7

Grades 4, 8, & 11

Table 8-7



APPENDIX E

SUMMARY OF THE UTILIZATION OF ASSESSMENT ITEMS

Grade 4, Indicator 1

Task	Number Per Task	Items Used
1. Determining or predicting a word based upon sentence context clues.	20	(A37), *D41, *D40, *A36, D42, C33, C31, B38 / C2, C3, *C5, B7, B5, B6, A9, A10, A12, B4, A11, *C4
2. Structuring cause and effect relationships in sentences or a paragraph to determine an appropriate word.	7	*D41, D40, A36, *A15, *A14 / C5, C4
3. Applying a given definition by identifying a sentence in which the definition is used.	4	C21, C19, C20, A13 /
4. Comparing two sentences and determining an appropriate meaning.	1	/ B1
5. Selecting an appropriate meaning based upon the sentence context clues.	2	A15, A14 /
6. Using a picture and sentence context to identify a word.	2	/ C6, B2
7. Translating a sentence into other words and matching it with another.	2	B37, A20 /
8. Identifying a phrase based upon a partially completed sentence.	1	/ D1
Total no. of tasks	39	Total no. of items used 32
Items excluded from the analysis		B40, B39, A35, C32, A17, B10, D5, B9, B11, D11, D9, A18, D10, D6, D4 Total no. of items excluded 15

* Items used in more than one task.
(○) Items judged inappropriate for use in the analysis.
/ Items listed to the left of the / are items in the top 50% P-score category.
/ Items listed to the right of the / are items in the bottom 50% P-score category.

Grade 4, Indicator 2

Task	Number Per Task	Items Used
Group A-D		
1. Degree of enjoyment of reading in school or in one's spare time.	2	A2, A1 /
2. Amount of time spent reading daily.	1	A3 /
Total no. of tasks	3	Total no. of items used 3
Group E-F		
1. Selecting reason why people read.	4	E7, E8, E9, E10 /
2. Selecting topics about which the students enjoyed reading.	3	E11 / E12, E13
3. Categorizing reading activities into "likes," "dislikes," and "don't know" groups.	9	F19, F20, F21, F22, F23, F24, F25, F26, F27 /
4. Deciding whether pictures represented people who are interested in books.	7	F28, F29, F30, F31, F32, F33 / F34
Total no. of tasks	23	Total no. of items used 23

* Items used in more than one task.
) Items judged inappropriate for use in the analysis.
/ Items listed to the left of the / are items in the top 50% P-score category.
/ Items listed to the right of the / are items in the bottom 50% P-score category.

Grade 4, Indicator 3

Task	Number Per Task	Items Used
Group A-D		
1. Identifying appropriate sources of information such as magazines, dictionaries, encyclopedias, newspapers, and telephone books.	9	B14 / D21, D15, D22, D20, D16, D18, D17, D14
2. Determining whether a subject heading for use in finding information in an encyclopedia was too general.	7	D32, C13, D30, D35, D33, C12, D31 /
3. Knowing the use of the television guide to determine time, length and type of programs.	3	D23, D27 / D26
4. Identifying parts of a book including the glossary, index, and table of contents.	2	/ C14, C15
5. Knowing the definition of "biography."	1	/ C9
Total no. of tasks	22	Total no. of items used 22
Group E-F		
1. Using resource materials (newspapers and brochures) to find a page or information about a particular subject.	7	F6, F4, E21, E6 / F15, E5, E14
2. Knowing information sources.	10	E4, F2 / E31, E30, E20, E1, E25, E23, F3, E2
Total no. of tasks	17	Total no. of items used 17
Items excluded from the analysis		B12, D19, B24, C16, A19, B25, A8 Total no. of items excluded 7

* Items used in more than one task.
O Items judged inappropriate for use in the analysis.
/ Items listed to the left of the / are items in the top 50% P-score category.
/ Items listed to the right of the / are items in the bottom 50% P-score category.

Grade 4, Indicator 4

Task	Number Per Task	Items Used
Group E-F		
1. Constructing a tinker toy object.	27	F69, F70, F68, F67, F66, F65, F64, F63, F62, F61, F60, F59, F58, F57, E37, E36, F38, F56, E35, F37, F55, E34, F36, E33, E32 / F53, F35
2. Following directions on a city model.	19	E50, E49, E48, E44, F51 / F39, E42, F47, F43, F41, F40, E38, E43, F48, F44, F45, F46, E45, F49
3. Filling out an application form, order blanks.	8	/ E19, E15, F10, E16, F8, F9, F11, E17
4. Writing words on a line and connecting dots.	4	E53 / E51, E54, E52
5. Following game instructions with marbles and blocks.	2	/ F17, F16
Total no. of tasks	60	Total no. of items used 60
Items excluded from the analysis		(C27), (A24), A25, B21, (D7), E47, E18, E41, E46, E40, E39, E17, F52, F50, F54, F13, F42, F12, F18
		Total no. of items excluded 14

* Items used in more than one task.
O Items judged inappropriate for use in the analysis.
/ Items listed to the left of the / are items in the top 50% P-score category.
/ Items listed to the right of the / are items in the bottom 50% P-score category.

Grade 4, Indicator 5

Task	Number Per Task	Items Used
Group A-D		
1. Locating, structuring, reorganizing, or recalling details.	8	D37, A31, *D35, D36 / A6, C7, C24, *B3
2. Translating an idea into other words.	3	*D35, C28 / A5
3. Inferring the main idea and relating details to a key phrase.	3	B32 / D3, A32
4. Identifying topic sentences.	3	A33, D8, D25 /
5. Knowing time indicators in language.	2	*C30 / *B3
6. Recalling specific number of details.	2	/ A27, A16
7. Inferring organizational structure.	1	*C30 /
8. Identifying similarities.	1	C26 /
Total no. of tasks	23	Total no. of items used 20
Items excluded from the analysis		B35, B33, C20, A28
		Total no. of items excluded 4

* Items used in more than one task.
○ Items judged inappropriate for use in the analysis.
/ Items listed to the left of the / are items in the top 50% P-score category.
/ Items listed to the right of the / are items in the bottom 50% P-score category.

Grade 4, Indicator 6

Task	Number Per Task	Items Used
Group A-D		
1. Literal comprehending of words and phrases and sentences in map reading, street signs, gum wrappers, and can labels.	9	B20, A21, D12, D38, B19, A7 / C1, C8, B18
2. Relating sentence meaning to a picture.	4	/ D2, C10, B8, (A4)
Total no. of tasks	13	Total no. of items used 13
Items excluded from the analysis		B17, B16
		Total no. of items excluded 2

* Items used in more than one task.
○ Items judged inappropriate for use in the analysis.
/ Items listed to the left of the / are items in the top 50% P-score category.
/ Items listed to the right of the / are items in the bottom 50% P-score category.

Grade 4, Indicator 7

Task	Number Per Task	Items Used
Group A-D		
1. Inferring conclusions, effect, explanations, and mood.	18	B36, C18, A34, *D17, *A23, *D39, *D24, B30 / B13, C22, *D23, D13, *B22, *A22, D26, *B31, *B15, *C17
2. Interpreting figurative language.	11	*A20, *B34, *C29, *D39, *D24, *B22, *D29, *A23 / *A29, *D27, *C17
3. Translating sentences or phrases into other words meaning the same (literal comprehension).	5	*A30, *B34, *D29, *A23 / *A29
4. Using situational and sentence context to predict a word.	5	*B34, *D39 / * D23, *A22, *B31
5. Inferring authors' purpose.	2	*C29 / *C17
6. Applying a generalization.	1	/ *B15
7. Recalling literal details.	1	/ C11
8. Analyzing elements.	1	*D27 /
Total no. of tasks	43	Total no. of items used 24
Items excluded from the analysis		D28, B29, A26, C23, B28
		Total no. of items excluded 5

* Items used in more than one task.
O Items judged inappropriate for use in the analysis.
/ Items listed to the left of the / are items in the top 50% P-score category.
/ Items listed to the right of the / are items in the bottom 50% P-score category.

Grade 8, Indicator 1

Task	Number Per Task	Items Used
Group A-D		
1. Using the situational (paragraph) context to determine an appropriate word.	17	A15, C49, A50, C48, D48, A49, D50, C47, A48 / B6, B4, B5, C46, C50, D49, D47
2. Completing word analogies. part-whole/word analogies compare/whole-part compare/object function	16	C41, B48, B47, D45, C43, B46, C42, A47, C45, B44 / B2, A44, A43, D46, D42, A46
3. Matching a word with a phrase or sentence which exemplifies the meaning of the word.	6	A16, A14, B15 / D4, D3, B13
4. Using the sentence context to determine proper meaning of a word.	2	/ B1, D2
5. Matching a meaning with a sentence which exemplifies the meaning.	2	/ C3, C2
6. Matching sentence context with retranslated sentences that mean the same.	2	/ A11, D27
Total no. of tasks	45	Total no. of items used 45
Items excluded from the analysis		D44, C29, D43, C44, B45, C4, A45, B12, B14, A42 Total no. of items excluded 10

* Items used in more than one task.
○ Items judged inappropriate for use in the analysis.
/ Items listed to the left of the / are items in the top 50% P-score category.
/ Items listed to the right of the / are items in the bottom 50% P-score category.

Grade 8, Indicator 2

Task	Number Per Task	Items Used
Group A-D		
1. Degree of enjoyment of reading in school or in one's own spare time.	2	A1, A2 /
2. Amount of time spent reading daily.	1	A3 /
Total no. of tasks	3	Total no. of items used 3
Group E-F		
1. Selecting reasons why people read.	9	E21, E22, E23, E24, E25, E26, E27, E28, E29 /
2. Deciding whether pictures represented people who are interested in books.	7	E14, E15, E16, E17, E18 / E19, E20
3. Selecting topics about which the students enjoyed reading.	4	F17, F18, F19 / F20
4. Categorizing reading activities into "likes," "dislikes," and "don't know" groups.	3	F14, F15, F16 /
Total no. of tasks	23	Total no. of items used 23

* Items used in more than one task.
○ Items judged inappropriate for use in the analysis.
/ Items listed to the left of the / are items in the top 50% P-score category.
/ Items listed to the right of the / are items in the bottom 50% P-score category.

Grade 8, Indicator 3

Task	Number Per Task	Items Used
Group A-D		
1. Knowing the content of a thesaurus.	1	/ D26
2. Determining the similarity between a thesaurus and a dictionary.	1	/ A25
3. Using the table of contents to find an appropriate heading.	4	B30, B18 / B31, D29
4. Knowing the card catalog, e.g., card number, subject card, non-fiction, alphabetizing, subject matter of book-call number, letter, author.	7	C14, C17, C18, C19, C15, C16 / C8
5. Using the index to locate information.	5	D20, D28 / D8, D10, D9
6. Knowing the content of an appendix.	1	D16 /
7. Knowing sources of information.	1	A35 /
8. Knowing what a biography is.	1	A20 /
9. Locating a title page.	1	/ D7
10. Knowing the function of bibliography.	1	D19 /
11. Knowing the function of a reference book.	1	A22 /
12. Knowing what a dedication is.	1	B22 /
13. Knowing what constitutes non-fiction, factual material.	1	A21 /
14. Knowing what a copyright date is.	1	D15 /
15. Finding a page number from the table of contents.	1	/ C7

★ Items used in more than one task.
○ Items judged inappropriate for use in the analysis.
/ Items listed to the left of the / are items in the top 50% P-score category.
/ Items listed to the right of the / are items in the bottom 50% P-score category.

Grade 8, Indicator 3 (Continued)

Task	Number Per Task	Items Used
Group A-D		
16. Recognizing of a biographical work from the title.	1	/ B9
17. Alphabetizing, finding a name in the telephone book.	1	/ C20
18. Knowing the function of a glossary.	1	/ D17
19. Using the index to find a page, entry.	1	/ A29
20. Inferring content of magazine by its title.	1	/ B20
21. Knowing the elements of the table of contents.	2	/ B17, A5
22. Knowing the function of the card catalog.	2	/ C12, C13
23. Knowing the definition of glossary.	1	/ B19
24. Using the television guide.	1	/ A28
25. Using the dictionary.	1	/ C9
Total no. of tasks	40	Total no. of items used 40
Items excluded from the analysis		B21, A30, D30, D18, B32, D24, A19, C6, A27, A26
		Total no. of items excluded 10

* Items used in more than one task.
Ō Items judged inappropriate for use in the analysis.
/ Items listed to the left of the / are items in the top 50% P-score category.
/ Items listed to the right of the / are items in the bottom 50% P-score category.

Grade 8, Indicator 3

Task	Number Per Task	Items Used
Group E-F		
1. Knowledge of the Reader's Guide as a reference source.	2	F2, E6 /
2. Knowledge of the encyclopedia as a reference source.	1	F7 /
3. Knowledge of general information source as reference, almanac, Guiness Book of World Records.	1	F4 /
4. Using the atlas to identify a geographical feature.	2	F13, E12 /
5. Using the almanac to find a specific information.	1	E10 /
6. Identifying content of directions, advertisements and schedules to determine which tell how to do things and and which tell about something.	9	/ F57, F58, F52, F40, F49, F53, F55, F54, F51
7. Relating a topic to a pamphlet.	8	/ F69, E58, F59, E47, F68, F66, F60, E59
8. Identifying sources of information such as the newspaper as a source of a) television programming and b) movie information.	1	/ E5
9. Using the dictionary to find a word.	1	/ F9
Total no. of tasks	26	Total no. of items used 26
Items excluded from the analysis		E7, E8, E13, E4, E2, E11, E9, E3, F6, F3, F1, F61, F65, F12, F62, F8, F5, F11, F10, F67, F64, F63 Total no. of items excluded 22

* Items used in more than one task.
○ Items judged inappropriate for use in the analysis.
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/ Items listed to the right of the / are items in the bottom 50% P-score category.

Grade 8, Indicator 4

Task	Number Per Task	Items Used
Group E-F		
1. Following written directions on a city model, locating various stores, shops, hotels, note street names and signs.	4	/ F39, E48, E49, E46
2. Reading rules of a card game and answering questions related to the rules.	1	/ E72
3. Following written directions in a simple experiment, proper sequence and performance.	4	/ E60, E61, E62, E63
4. Drawing a combination of geometric figures.	5	E64, E65, E66 / E67, E68
5. Writing words on a line and connecting dots, a paper and pencil task.	4	/ E76, E75, E78, E77
6. Opening a combination lock.	1	/ F21
7. Filling a job application form.	11	/ F32, F30, F31, F33, F27, F26, F35, F29, F34, F28, F36
8. Writing numbers in an appropriate geometric figure.	4	/ F81, F84, F85, F82
Total no. of tasks	34	Total no. of items used 34
Items excluded from the analysis		(B28), (C25), (D11), (A17), D12, (B7), E56, F77, F74, E45, E44, E43, E42, E41, E39, E40, F48, F25, F24, F43, E38, F42, F23, F47, F41, E55, E73, F76, E54, F74, F75, E37, F46, E47, F45, E52, F40, F83, E51, E53, E50, F22, E36, E71 Total no. of items excluded 39

* Items used in more than one task.
○ Items judged inappropriate for use in the analysis.
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/ Items listed to the right of the / are items in the bottom 50% P-score category.

Grade 8, Indicator 5

Task	Number Per Task	Items Used
Group A-D		
1. Locating, structuring, reorganizing or recalling details.	6	A37, D37 / A6, B8, A8, C32
2. Inferring the main idea and relating details to a key phrase.	5	A34, A23, C30 / C22, C26
3. Inferring organizational structure.	4	D33, *B35 / B29, D6
4. Translating an idea into other words.	4	*B35, D35, B40 / C24
5. Identifying similarities.	1	D21 /
Total no. of tasks	20	Total no. of items used 19
Items excluded from the analysis		B36, C33, D36, C27, B39, A12
		Total no. of items excluded 6

* Items used in more than one task.
○ Items judged inappropriate for use in the analysis.
/ Items listed to the left of the / are items in the top 50% P-score category.
/ Items listed to the right of the / are items in the bottom 50% P-score category.

Grade 8, Indicator 6

Task	Number Per Task	Items Used
Group A-D		
1. Reading a graph with three axes to determine data beyond what is given.	1	C28 /
2. Using a time schedule to determine which appointments can be met.	1	D14 /
3. Reading a graph with three axes to determine time of most fatal accidents.	1	A24 /
4. Reading a report card to determine use of legend.	3	D22, B11, A9 /
5. Reading street signs.	1	/ A4
6. Reading a map to determine proximity, directionality, and routes.	1	/ B27
7. Reading a gum wrapper to determine lasting sweetness.	1	/ D5
8. Reading a sign to determine position on the door.	1	/ C1
9. Matching a sentence to a picture.	1	/ B3
10. Reading can labels to determine quantity difference.	1	C11 /
Total no. of tasks	12	Total no. of items used 30
Items excluded from the analysis		C21, B26, B43
		Total no. of items excluded 3

* Items used in more than one task.
○ Items judged inappropriate for use in the analysis.
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/ Items listed to the right of the / are items in the bottom 50% P-score category.

Grade 8, Indicator 7

Task	Number Per Task	Items Used
Group A-D		
1. Analyzing of purpose, point of view.	4	*D41, C35 / *D31, B38
2. Analyzing of element particulars--to deduce particulars.	4	*C39, *B42 / *C5, D13
3. Analyzing of relationships, inter-relationships, part-whole.	7	*C39, *C38, A39, C37 / *D31, A31, *C5
4. Inferring main ideas, retranslation.	6	D40, D39, B33, C40 / A33, *C5
5. Inferring detail, line.	6	*C39, *B42, A41, D38 / B16, B37
6. Situational context.	3	*C38 / A13, C23
7. Retranslating main idea.	1	/ *C34
8. Interpreting figurative language, details, meaning, mood, and main idea.	6	*D41, A40, *A41 / D35, *D31, *C5
9. Retranslating a detail.	2	*A41 / C10
10. Identifying details, cause and effect structure.	3	*A41 / *D31, *C34
11. Predicting outcomes.	1	/ A10
Total no. of tasks	43	Total no. of items used 28
Items excluded from the analysis		D32, (A18), A36, A32, B41, C36, D34, D23, C31, B10, B34, A38
		Total no. of items excluded 12

* Items used in more than one task.
○ Items judged inappropriate for use in the analysis.
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/ Items listed to the right of the / are items in the bottom 50% P-score category.

Grade 11, Indicator 1

Task	Number Per Task	Items Used
1. Completing word relationshipd in analogies.	18	B20, C41, C40, C39, B14, D45, C42, B16, A20, C43 / A19, A16, A17, D43, D42, B17, D46
2. Using the situational (paragraph) context to determine an appropriate word.	15	A47, D49, B45, B44, B43, A49, B46, D47, A48, C44, D48, C47 / C4, C2, C3
3. Determining appropriate words from the sentence context.	9	A30 / D5, D6, D8, D9, D7, D4, A46, A32
4. Matching a word with a phrase or sentence which exemplifies the meaning of the word.	5	B27, B25 / C23, C24, C25
5. Matching a word and definition with a phrase or sentence which exemplifies the meaning.	1	/ A5
6. Matching a meaning of a word in sentence context with a definition.	3	/ C6, C5, C7
7. Matching sentence context with retranslated sentences that mean the same.	3	/ B3, B2, B1
8. Recognizing an interrogative statement.	1	/ D1
Total no. of tasks	55	Total no. of items used 55
Items excluded from the analysis		A28, C18, D44, B18, A33, A39, C45, D50, C22, A29, C46, A31 Total no. of items excluded 12

* Items used in more than one task.
○ Items judged inappropriate for use in the analysis.
/ Items listed to the left of the / are items in the top 50% P-score category.
/ Items listed to the right of the / are items in the bottom 50% P-score category.

Grade 11, Indicator 2

Task	Number Per Task	Items Used
Group A-D		
1. Degree of enjoyment of reading in school or in one's spare time.	2	A1, A2 /
2. Amount of time spent reading daily.	1	A3 /
Total no. of tasks	3	Total no. of items used 3
Group E-F		
1. Deciding which pictures represented people who were interested in books.	7	F21, F22, F23, F24, F25, F26 / F27
2. Selecting topics about which the students enjoyed reading.	4	F28, F29, F30, F31 /
3. Categorizing reading activities into "likes," "dislikes," and "don't know" groups.	3	E23, E24, E25 /
Total no. of tasks	14	Total no. of items used 14

* Items used in more than one task.
O Items judged inappropriate for use in the analysis.
/ Items listed to the left of the / are items in the top 50% P-score category.
/ Items listed to the right of the / are items in the bottom 50% P-score category.

Grade 11, Indicator 3

Task	Number Per Task	Items Used
Group A-D		
1. Knowing the card catalog--classification system, author, letter determination, subject matter, determining all numbers, title, and alphabetizing.	5	B6, B9, B10 / B4, B5
2. Using table of contents.	5	A36 / D30, A37, A6, D22, C9
3. Using the television guide to determine length of program, rerun, and time.	3	/ B33, B32, B31
4. Using the glossary--function, location.	2	/ A8, D21
5. Using the index to determine page.	2	/ D26, A7
6. Knowing how fictional works are arranged on the library shelves.	1	/ D10
7. Knowing identification of fiction.	1	/ A25
8. Using the newspaper--locating a type of article.	1	C27 /
9. Knowing what an autobiography is.	1	A24 /
Total no. of tasks	21	Total no. of items used 21
Items excluded from the analysis		D33, B11, D20, C28, B8, B7, D31, A38, C29, C26, D23, B34, D3, A22, D29, A23, B30

* Items used in more than one task.
○ Items judged inappropriate for use in the analysis.
/ Items listed to the left of the / are items in the top 50% P-score category.
/ Items listed to the right of the / are items in the bottom 50% P-score category.

Grade 11, Indicator 3

Task	Number Per Task	Items Used
Group E-F		
1. Identifying a page on which a particular word appears in the dictionary.	4	/ *E3, *F18, E16, E6
2. Identifying an appropriate (application) for a particular purpose.	8	/ E28, E26, E41, E32, E29, E31, E27, E43
3. Knowing sources of information about--a. movies b. television c. night club acts d. synonyms (thesaurus, dictionary) e. geography	16	*F4, *F3 / *F10, E7, E3, F2, F8, E2, E1, E5, F5, E13, F14, F13, E17
4. Using the Reader's Guide as a source of magazine titles.	3	*F4, F10, E4 /
5. Using an atlas to determine relative size of topography.	3	E20, F15, E19 /
6. Using an almanac.	1	
7. Knowing the function and purpose of thesaurus.	2	E9, F6 /
Total no. of tasks	37	Total no. of items used 29

* Items used in more than one task.
○ Items judged inappropriate for use in the analysis.
/ Items listed to the left of the / are items in the top 50% P-score category.
/ Items listed to the right of the / are items in the bottom 50% P-score category.

Grade 11, Indicator 4

Task	Number Per Task	Items Used
1. Following written directions on a city model, locating various stores, shops, hotels, street names and signs.	20	F53, F52, F50, E47, E53, F57, E52, E44, F48, F59, F54, F50, E46, E51, F49, E50 / F58, E48, F47, E54
2. Reading rules of a card game and answering questions related to the rules.	7	E65, F68, E63 / E62, F66, F64, F67
3. Following written directions in a simple experiment, proper sequence and performance.	1	/ E33
4. Following written directions in a sequence to use a copy machine.	5	/ E55, E54, E56, E57, E58
5. Drawing a combination of geometric figures.	5	E70, E69, E67, E68 / E66
Total no. of tasks	33	Total no. of items used 33
Items excluded from the analysis		C10, A10, C11, D11, B29, A11, C12, E35, E34, F55, F65, E36, E60, E40, E38, E39, E41, E37, E59, E49, F56, F68, E50, F49, E51, E46, E68, F50, E65, E52, E67
		Total no. of items excluded 31

* Items used in more than one task.
O Items judged inappropriate for use in the analysis.
/ Items listed to the left of the / are items in the top 50% P-score category.
/ Items listed to the right of the / are items in the bottom 50% P-score category.

Grade 11, Indicator 5

Task	Number Per Task	Items Used
1. Recognizing and recalling details.	6	/ A12, B13, A14, D13, D14, C16
2. Inferring main ideas.	4	B29, C32, D32, *D25/
3. Identifying main ideas.	3	B28 / *A13, *C14
4. Identifying chronological pattern.	2	C33 / B19
5. Generalizing from details.	2	/ A26, *A13
6. Interpreting figurative language.	1	D25 /
7. Retranslating details.	1	/ *C14
Total no. of tasks	19	Total no. of items used 16
Items excluded from the analysis		D35, A41, B21, D24, C35, C15, A21, C17, B12, B22, C13, D12
		Total no. of items excluded 12

* Items used in more than one task.
○ Items judged inappropriate for use in the analysis.
/ Items listed to the left of the / are items in the top 50% P-score category.
/ Items listed to the right of the / are items in the bottom 50% P-score category.

Grade 11, Indicator 6

Task	Number Per Task	Items Used
1. Reading a map to determine route and proximity.	4	/ D16, D17, D18, D15
2. Reading a report card using the legend to determine reporting period and performance in a particular subject.	3	/ D28, B20, A15
3. Reading a graph to analyze relationship of elements, deducing conclusions.	2	A40, B35 /
4. Reading street signs.	2	/ A4, C1
5. Using a time schedule to determine which appointments can be met.	1	C30 /
Total no. of tasks	12	Total no. of items used 12
Items excluded from the analysis		C8, C19, D19
		Total no. of items excluded 3

* Items used in more than one task.
○ Items judged inappropriate for use in the analysis.
/ Items listed to the left of the / are items in the top 50% P-score category.
/ Items listed to the right of the / are items in the bottom 50% P-score category.

Grade 11, Indicator 7

Task	Number Per Task	Items Used
1. Inferring the main idea.	7	D40, D41, *A43, C37 / *D2, *A9, B23
2. Interpreting simple figurative language for meaning.	8	D39, D38, C34 / *D2, *A9, *B36, A42, D36
3. Analyzing relationships cause and effect.	6	B42, B41, B40 / A27, *A39, *B36
4. Retranslating detail.	3	/ *A39, *C20, C31
5. Analyzing point of view.	3	B39, C36 / D37
6. Retranslating main idea.	4	*A43 / C21, A35, *C20
7. Analyzing accuracy.	2	C38, A34 /
Total no. of tasks	33	Total no. of items used 27
Items excluded from the analysis		A44, B37, (B38), (D27), A45, D36
		Total no. of items excluded 6

* Items used in more than one task.
○ Items judged inappropriate for use in the analysis.
/ Items listed to the left of the / are items in the top 50% P-score category.
/ Items listed to the right of the / are items in the bottom 50% P-score category.

APPENDIX F

SUMMARY OF LET AND CONTENT PREREQUISITES

Table 1-2: Summary of Prerequisites and Content of the Top and Bottom 40% P-Score Groups

Grade 4

Indicator 1

Grade	Language	Experience	Thinking	Content Used
Characteristics by percentage of task demands of the top 40% of the items packages A-F	High 0%	Abstract	Evaluative	General 100%
	Med. 6%	Vicarious 6%	Divergent	
			Convergent 10%	
	Low 94%	Concrete 94%	Structuring 15%	
			Cog. Memory 75%	

Grade	Language	Experience	Thinking	Content Used
Characteristics by percentage of task demands of the bottom 40% of the items packages A-F	High	Abstract 16%	Evaluative	General 44%
	Med. 65%	Vicarious 50%	Divergent 9%	S/Studies 31%
			Convergent 22%	Science 19%
	Low 35%	Concrete 34%	Structuring 30%	Homemaking 6%
			Cog. Memory 39%	

Total number of items 47

Total number of items used 32

Percentage of items used 68%

Range of P-Scores in the top 40% group 90.5 - 75.1
No. of items used 16

Range of P-Scores in the bottom 40% group 48.8 - 22.3
No. of items used 16

Table 3-2: Summary of Prerequisites and Content of the Top and Bottom 40% P-Score Groups

Grade 4

Indicator 3, packages A-D

Grade	Language	Experience	Thinking	Content Used
Characteristics by percentage of task demands of the top 40% of the items packages A-F	High	Abstract	Evaluative	General 80%
	Med.	Vicarious 33%	Divergent	Science 10%
			Convergent	Literature 10%
	Low 100%	Concrete 67%	Structuring 20%	
			Cog. Memory 80%	

Grade	Language	Experience	Thinking	Content Used
Characteristics by percentage of task demands of the bottom 40% of the items packages A-F	High	Abstract	Evaluative	General 25%
	Med. 20%	Vicarious 80%	Divergent 10%	S/Studies 67%
			Convergent 70%	Science 8%
	Low 80%	Concrete 20%	Structuring	
			Cog. Memory 20%	

Total number of items	29	Range of P-Scores in the top 40% group	77.5 - 52.4
Total number of items used	22	No. of items used	12
Percentage of items used	76%	Range of P-Scores in the bottom 40% group	10.9 - 41.6
		No. of items used	10

Table 3-2a: Summary of Prerequisites and Content of the Top and Bottom 40% P-Score Groups

Grade 4

Indicator 3, packages E-F

Grade	Language	Experience	Thinking	Content Used
Characteristics by percentage of task demands of the top 40% of the items packages A-F	High	Abstract	Evaluative	General 100%
	Med.	Vicarious	Divergent	
			Convergent 18%	
	Low 100%	Concrete 100%	Structuring 18%	
			Cog. Memory 64%	

Grade	Language	Experience	Thinking	Content Used
Characteristics by percentage of task demands of the bottom 40% of the items packages A-F	High	Abstract	Evaluative	General 66%
	Med. 50%	Vicarious 50%	Divergent	S/Studies 17%
			Convergent	Science 17%
	Low 50%	Concrete 50%	Structuring 14%	
			Cog. Memory 86%	

Total number of items	26	Range of P-Scores in the top 40% group	98.4 - 75.4
Total number of items used	17	No. of items used	11
Percentage of items used	62%	Range of P-Scores in the bottom 40% group	21.6 - 56.0
		No. of items used	6

Table 4-2: Summary of Prerequisites and Content of the Top and Bottom 40% P-Score Groups

Grade 4

Indicator 4, packages E-F

Grade	Language	Experience	Thinking	Content Used
Characteristics of task demands of the top 40% of the items packages A-F	High	Abstract	Evaluative	
	Med. 17%	Vicarious 47%	Divergent	
			Convergent 6%	
	Low 83%	Concrete 53%	Structuring 6%	
			Cog. Memory 88%	

Grade	Language	Experience	Thinking	Content Used
Characteristics of task demands of the bottom 40% of the items packages A-F	High 3%	Abstract 60%	Evaluative	
	Med. 10%	Vicarious 20%	Divergent 30%	
			Convergent 24%	
	Low 87%	Concrete 20%	Structuring 32%	
			Cog. Memory 14%	

Total number of items 73

Total number of items used 60

Percentage of items used 82%

Range of P-Scores in the top 40% group 98.0 - 78.1
No. of items used 30

Range of P-Scores in the bottom 40% group 26.7 - 67.0
No. of items used 30

Table 5-2: Summary of Prerequisites and Content of the Top and Bottom 40% P-Score Groups

Grade 4

Indicator 5

Grade	Language	Experience	Thinking	Content Used
Characteristics by percentage of task demands of the top 40% of the items packages A-F	High	Abstract	Evaluative	General 60%
	Med. 10%	Vicarious 70%	Divergent	Literature 30%
			Convergent 8%	S/Studies 10%
	Low 90%	Concrete 30%	Structuring 25%	
			Cog. Memory 67%	

Grade	Language	Experience	Thinking	Content Used
Characteristics by percentage of task demands of the bottom 40% of the items packages A-F	High 50%	Abstract 20%	Evaluative	S/Studies 17%
	Med. 40%	Vicarious 60%	Divergent	Science 50%
			Convergent 11%	Literature 17%
	Low 10%	Concrete 20%	Structuring 42%	General 17%
			Cog. Memory 47%	

Total number of items	23	Range of P-Scores in the top 40% group	79.4 - 63.2
Total number of items used	20	No. of items used	10
Percentage of items used	87%	Range of P-Scores in the bottom 40% group	18.7 - 30.6
		No. of items used	10

Table 6-2: Summary of Prerequisites and Content of the Top and Bottom 40% P-Score Groups

Grade 4

Indicator 6, packages A-D

Grade	Language	Experience	Thinking	Content Used
Characteristics by percentage of task demands of the top 40% of the items packages A-F	High	Abstract	Evaluative	General 83%
	Med. 17%	Vicarious 17%	Divergent	S/Studies 17%
			Convergent	
	Low 83%	Concrete 83%	Structuring	
			Cog. Memory 100%	

Grade	Language	Experience	Thinking	Content Used
Characteristics by percentage of task demands of the bottom 40% of the items packages A-F	High	Abstract 25%	Evaluative	General 67%
	Med. 17%	Vicarious 25%	Divergent	S/Studies 33%
			Convergent	
	Low 83%	Concrete 50%	Structuring 25%	
			Cog. Memory 75%	

Total number of items	15	Range of P-Scores in the top 40% group	91.3 - 71.1
Total number of items used	12	No. of items used	6
Percentage of items used	80%	Range of P-Scores in the bottom 40% group	45.5 - 61.6
		No. of items used	6

Table 7-2: Summary of Prerequisites and Content of the Top and Bottom 40% P-Score Groups

Grade 4

Indicator 7

Grade	Language	Experience	Thinking	Content Used
Characteristics by percentage of task demands of the top 40% of the items packages A-F	High 8%	Abstract	Evaluative	General 42%
	Med.	Vicarious 42%	Divergent 22%	Literature 58%
			Convergent 50%	
	Low 92%	Concrete 58%	Structuring 14%	
			Cog. Memory 14%	

Grade	Language	Experience	Thinking	Content Used
Characteristics by percentage of task demands of the bottom 40% of the items packages A-F	High 50%	Abstract 9%	Evaluative	Literature 73%
	Med. 17%	Vicarious 55%	Divergent 5%	General 27%
			Convergent 25%	
	Low 33%	Concrete 36%	Structuring 45%	
			Cog. Memory 25%	

Total number of items	29	Range of P-Scores in the top 40% group	77.2 - 55.5
Total number of items used	24	No. of items used	12
Percentage of items used	83%	Range of P-Scores in the bottom 40% group	14.2 - 46.1
		No. of items used	12

Table 1-2: Summary of Prerequisites and Content of the Top and Bottom 40% P-Score Groups

Grade 8

Indicator 1

Grade	Language	Experience	Thinking	Content Used
Characteristics by percentage of task demands of the top 40% of the items packages A-F	High	Abstract 6%	Evaluative 17%	General 82%
	Med. 20%	Vicarious 47%	Divergent	Science 9%
			Convergent 13%	S/Studies 9%
	Low 80%	Concrete 47%	Structuring 17%	
			Cog. Memory 53%	

Grade	Language	Experience	Thinking	Content Used
Characteristics by percentage of task demands of the bottom 40% of the items packages A-F	High 12%	Abstract 6%	Evaluative	General 73%
	Med. 41%	Vicarious 41%	Divergent 29%	S/Studies 9%
			Convergent	Science 18%
	Low 47%	Concrete 53%	Structuring 38%	
			Cog. Memory 33%	

Total number of items	55	Range of P-Scores in the top 40% group	93.2 - 66.8
Total number of items used	44	No. of items used	22
Percentage of items used	80%	Range of P-Scores in the bottom 40% group	8.2 - 52.5
		No. of items used	22

Table 3-2: Summary of Prerequisites and Content of the Top and Bottom 40% P-Score Groups

Grade 8

Indicator 3

Grade	Language	Experience	Thinking	Content Used
Characteristics by percentage of task demands of the top 40% of the items packages A-F	High	Abstract	Evaluative	General 100%
	Med. 10%	Vicarious 10%	Divergent	
			Convergent 10%	
	Low 90%	Concrete 90%	Structuring	
			Cog. Memory 90%	

Grade	Language	Experience	Thinking	Content Used
Characteristics by percentage of task demands of the bottom 40% of the items packages A-F	High	Abstract	Evaluative	General 29%
	Med. 71%	Vicarious 71%	Divergent	S/Studies 71%
			Convergent	
	Low 29%	Concrete 29%	Structuring	
			Cog. Memory 100%	

Total number of items	49	Range of P-Scores in the top 40% group	97.1 - 82.6
Total number of items used	27	No. of items used	20
Percentage of items used	55%	Range of P-Scores in the bottom 40% group	18.3 - 46.8
		No. of items used	7

Table 4-2: Summary of Prerequisites and Content of the Top and Bottom 40% P-Score Groups

Grade 8

Indicator 4, packages E-F

Grade	Language	Experience	Thinking	Content Used
Characteristics by percentage of task demands of the top 40% of the items packages A-F	High	Abstract	Evaluative	General 100%
	Med.	Vicarious	Divergent	
			Convergent	
	Low 100%	Concrete 100%	Structuring	
			Cog. Memory 100%	

Grade	Language	Experience	Thinking	Content Used
Characteristics by percentage of task demands of the bottom 40% of the items packages A-F	High	Abstract 100%	Evaluative	
	Med. 100%	Vicarious	Divergent 100%	General 100%
			Convergent	
	Low	Concrete	Structuring	
			Cog. Memory	

Total number of items	73	Range of P-Scores in the top 40% group	99.4 - 91.6
Total number of items used	31	No. of items used	29
Percentage of items used	45%	Range of P-Scores in the bottom 40% group	42.4 - 47.4
		No. of items used	2

Table 5-2: Summary of Prerequisites and Content of the Top and Bottom 40% P-Score Groups

Grade 8

Indicator 5

Grade	Language	Experience	Thinking	Content Used
Characteristics by percentage of task demands of the top 40% of the items packages A-F	High 10%	Abstract 10%	Evaluative	General 67%
	Med. 20%	Vicarious 40%	Divergent	S/Studies 11%
			Convergent 25%	Literature 11%
	Low 70%	Concrete 50%	Structuring 33%	Science 11%
			Cog. Memory 42%	

Grade	Language	Experience	Thinking	Content Used
Characteristics by percentage of task demands of the bottom 40% of the items packages A-F	High 70%	Abstract 20%	Evaluative	S/Studies 30%
	Med. 30%	Vicarious 80%	Divergent	Literature 30%
			Convergent 33%	Science 40%
	Low	Concrete	Structuring 25%	
			Cog. Memory 42%	

Total number of items 26

Total number of items used 20

Percentage of items used 77%

Range of P-Scores in the top 40% group 92.7 - 67.3
No. of items used 10

Range of P-Scores in the bottom 40% group 19.7 - 54.6
No. of items used 10

Table 6-2: Summary of Prerequisites and Content of the Top and Bottom 40% P-Score Groups

Grade 8

Indicator 6

Grade	Language	Experience	Thinking	Content Used
Characteristics by percentage of task demands of the top 40% of the items packages A-F	High	Abstract	Evaluative	General 100%
	Med. 25%	Vicarious	Divergent	
			Convergent 40%	
	Low 75%	Concrete 100%	Structuring 40%	
			Cog. Memory 20%	

Grade	Language	Experience	Thinking	Content Used
Characteristics by percentage of task demands of the bottom 40% of the items packages A-F	High	Abstract 25%	Evaluative	General 50%
	Med. 75%	Vicarious 50%	Divergent 20%	S/Studies 50%
			Convergent 40%	
	Low 25%	Concrete 25%	Structuring 40%	
			Cog. Memory	

Total number of items 19

Total number of items used 12

Percentage of items used 63%

Range of P-Scores in the top 40% group 96.1 - 83.1

No. of items used 8

Range of P-Scores in the bottom 40% group 18.7 - 55.3

No. of items used 4

Table 7-2: Summary of Prerequisites and Content of the Top and Bottom 40% P-Score Groups

Grade 8

Indicator 7

Grade	Language	Experience	Thinking	Content Used
Characteristics by percentage of task demands of the top 40% of the items packages A-F	High 8%	Abstract 8%	Evaluative	General 50%
	Med, 38%	Vicarious 46%	Divergent 19%	Literature 36%
			Convergent 31%	S/Studies 7%
	Low 54%	Concrete 46%	Structuring 19%	Science 7%
			Cog. Memory 31%	

Grade	Language	Experience	Thinking	Content Used
Characteristics by percentage of task demands of the bottom 40% of the items packages A-F	High 71%	Abstract 79%	Evaluative 5%	General 14%
	Med. 22%	Vicarious 21%	Divergent 12%	Science 14%
			Convergent 47%	Literature 29%
	Low 7%	Concrete	Structuring 12%	S/Studies 43%
			Cog. Memory 24%	

Total number of items	40	Range of P-Scores in the top 40% group	90.2 - 61.4
Total number of items used	28	No. of items used	14
Percentage of items used	65%	Range of P-Scores in the bottom 40% group	11.0 - 36.5
		No. of items used	14

Table 1-2: Summary of Prerequisites and Content of the Top and Bottom 40% P-Score Groups

Grade 11

Indicator 1

Grade	Language	Experience	Thinking	Content Used
Characteristics by percentage of task demands of the top 40% of the items packages A-F	High	Abstract	Evaluative	General 76%
	Med. 25%	Vicarious 36%	Divergent	Science 5%
			Convergent	Music 5%
	Low 75%	Concrete 64%	Structuring 50%	Workshop 5%
			Cog. Memory 50%	S/Studies 9%

Grade	Language	Experience	Thinking	Content Used
Characteristics by percentage of task demands of the bottom 40% of the items packages A-F	High 37%	Abstract 47%	Evaluative	General 30%
	Med. 53%	Vicarious 35%	Divergent	Literature 19%
			Convergent 14%	S/Studies 13%
	Low 10%	Concrete 18%	Structuring 48%	Science 38%
			Cog. Memory 38%	

Total number of items 67

Total number of items used 54

Percentage of items used 81%

Range of P-Scores in the top 40% group 97.7 - 72.9

No. of items used 27

Range of P-Scores in the bottom 40% group 6.0 - 59.9

No. of items used 27

Table 3-2: Summary of Prerequisites and Content of the Top and Bottom 40% P-Score Groups

Grade 11

Indicator 3, packages A-D

Grade	Language	Experience	Thinking	Content Used
Characteristics by percentage of task demands of the top 40% of the items packages A-F	High	Abstract	Evaluative	General 19%
	Med. 37%	Vicarious 56%	Divergent	Reference 38%
			Convergent	S/Studies 38%
	Low 63%	Concrete 44%	Structuring	Science 5%
			Cog. Memory	

Grade	Language	Experience	Thinking	Content Used
Characteristics by percentage of task demands of the bottom 40% of the items packages A-F	High	Abstract 33%	Evaluative	Gen./Ref. 67%
	Med. 50%	Vicarious 50%	Divergent	Literature 33%
			Convergent 17%	
	Low 50%	Concrete 17%	Structuring 17%	
			Cog. Memory 66%	

Total number of items	38	Range of P-Scores in the top 40% group	95.8 - 76.5
Total number of items used	21	No. of items used	15
Percentage of items used	54%	Range of P-Scores in the bottom 40% group	30.5 - 50.3
		No. of items used	6

Table 3-2a: Summary of Prerequisites and Content of the Top and Bottom 40% P-Score Groups

Grade 11

Indicator 3, packages E-F

Grade	Language	Experience	Thinking	Content Used
Characteristics by percentage of task demands of the top 40% of the items packages A-F	High	Abstract	Evaluative	General 86%
			Divergent	S/Studies 14%
	Med. 41%	Vicarious 32%	Convergent	
			Structuring	
	Low 59%	Concrete 68%	Cog. Memory 100%	

Grade	Language	Experience	Thinking	Content Used
Characteristics by percentage of task demands of the bottom 40% of the items packages A-F	High	Abstract	Evaluative	General 44%
			Divergent 23%	S/Studies 44%
	Med. 38%	Vicarious 67%	Convergent	Science 12%
			Structuring	
	Low 62%	Concrete 33%	Cog. Memory 77%	

Total number of items 51

Total number of items used 33

Percentage of items used 63%

Range of P-Scores in the top 40% group 98.4 - 81.0

No. of items used 24

Range of P-Scores in the bottom 40% group 27.5 - 50.5

No. of items used 9

Table 4-2: Summary of Prerequisites and Content of the Top and Bottom 40% P-Score Groups

Grade 11

Indicator 4, packages E-F

Grade	Language	Experience	Thinking	Content Used
Characteristics by percentage of task demands of the top 40% of the items packages A-F	High	Abstract	Evaluative	S/Studies 45%
			Divergent	
	Med. 11%	Vicarious 11%	Convergent	General 55%
			Structuring	
	Low 89%	Concrete 89%	Cog. Memory 100%	

Grade	Language	Experience	Thinking	Content Used
Characteristics by percentage of task demands of the bottom 40% of the items packages A-F	High	Abstract	Evaluative	
			Divergent	General 33%
	Med. 17%	Vicarious 34%	Convergent	S/Studies 67%
			Structuring 25%	
	Low 83%	Concrete 66%	Cog. Memory 75%	

Total number of items 52

Total number of items used 24

Percentage of items used 46%

Range of P-Scores in the top 40% group 93.3 - 87.3
No. of items used 18

Range of P-Scores in the bottom 40% group 56.1 - 67.8
No. of items used 6

Table 5-2: Summary of Prerequisites and Content of the Top and Bottom 40% P-Score Groups

Grade 11

Indicator 5

Grade	Language	Experience	Thinking	Content Used
Characteristics by percentage of task demands of the top 40% of the items packages A-F	High 10%	Abstract	Evaluative	General 50%
	Med. 80%	Vicarious 50%	Divergent	S/Studies 30%
			Convergent 17%	Science 20%
	Low 10%	Concrete 50%	Structuring 8%	
			Cog. Memory 75%	

Grade	Language	Experience	Thinking	Content Used
Characteristics by percentage of task demands of the bottom 40% of the items packages A-F	High 50%	Abstract 17%	Evaluative	General 17%
	Med. 50%	Vicarious 83%	Divergent	Literature 50%
			Convergent 34%	Science 17%
	Low	Concrete	Structuring 33%	S/Studies 16%
			Cog. Memory 33%	

Total number of items 28

Total number of items used 16

Percentage of items used 57%

Range of P-Scores in the top 40% group 97.1 - 86.1
No. of items used 10

Range of P-Scores in the bottom 40% group 25.7 - 59.2
No. of items used 6

Table 6-2: Summary of Prerequisites and Content of the Top and Bottom 40% P-Score Groups

Grade 11

Indicator 6

Grade	Language	Experience	Thinking	Content Used
Characteristics by percentage of task demands of the top 40% of the items packages A-F	High	Abstract	Evaluative	General 78%
	Med.	Vicarious	Divergent	S/Studies 22%
			Convergent	
	Low 100%	Concrete 100%	Structuring	
			Cog. Memory 100%	

Grade	Language	Experience	Thinking	Content Used
Characteristics by percentage of task demands of the bottom 40% of the items packages A-F	High 33%	Abstract 67%	Evaluative 29%	
	Med. 33%	Vicarious	Divergent 29%	S/Studies 67%
			Convergent 14%	General 33%
	Low 34%	Concrete 33%	Structuring	
			Cog. Memory 28%	

Total number of items	15	Range of P-Scores in the top 40% group	97.1 - 91.0
Total number of items used	12	No. of items used	9
Percentage of items used	80%	Range of P-Scores in the bottom 40% group	31.0 - 59.8
		No. of items used	3

Table 7-2: Summary of Prerequisites and Content of the Top and Bottom 40% P-Score Groups

Grade 11

Indicator 7

Grade	Evaluation	Experience	Thinking	Content Used
Characteristics by percentage of task demands of the top 40% of the items packages A-F	High 25%	Abstract 9%	Evaluative	Literature 64%
	Med. 42%	Vicarious 63%	Divergent	S/Studies 18%
			Convergent 36%	Science 18%
	Low 33%	Concrete 28%	Structuring 9%	
			Cog. Memory 55%	

Grade	Evaluation	Experience	Thinking	Content Used
Characteristics by percentage of task demands of the bottom 40% of the items packages A-F	High 62%	Abstract 75%	Evaluative	S/Studies 67%
	Med. 23%	Vicarious 25%	Divergent 25%	Literature 33%
			Convergent 50%	
	Low 15%	Concrete	Structuring 8%	
			Cog. Memory 17%	

Total number of items	33	Range of P-Scores in the top 40% group	94.8 - 65.3
Total number of items used	27	No. of items used	13
Percentage of items used	82%	Range of P-Scores in the bottom 40% group	14.8 - 47.2
		No. of items used	14

APPENDIX G

IDENTICAL ITEMS USED IN ALL THREE GRADE LEVELS BY INDICATOR

Indicator 1

P-Values of

Items Appearing in Grades 4, 8, & 11

GRADE 4		GRADE 8		GRADE 11	
ITEM	MEAN SCORE	ITEM	MEAN SCORE	ITEM	MEAN SCORE
1. B37/5	29.6	C39/24	55.4	C18/30	65.3
2. C21/7	22.3	C4/28	59.1	C7/48	79.7
3. A20/15	48.3	D27/40	66.9	A5/49	81.5
4. C19/8	33.0	C2/42	70.4	C5/50	83.1
5. C20/10	36.9	C3/43	74.8	C6/57	88.7
6. D5/23	61.3	B5/46	84.3	C3/53	86.9
7. D4/24	61.9	B4/47	84.5	C2/60	91.9
8. B10/22	60.7	D3/48	86.0	B2/66	96.5
9. B9/25	62.4	D2/50	88.7	B1/65	95.4
10. D6/31	70.0	B6/51	89.3	C4/62	92.4
11. B11/26	65.5	D4/54	93.2	B3/67	97.7

P-Values of

Items Appearing in Grades 4, 8, & 11

GRADE 4		GRADE 8		GRADE 11	
ITEM	MEAN SCORE	ITEM	MEAN SCORE	ITEM	MEAN SCORE
1. B27/9	33.6	A/3022	53.7	B34/18	72.8
2. B24/13	42.5	A27/29	61.0	B31/25	77.6
3. B23/8	31.3	A26/30	61.2	B30/23	75.9
4. B25/16	44.9	A28/36	67.9	B32/32	86.3
5. B14/10	39.4	D7/40	75.4		

P-Values of

Items Appearing in Grades 4, 8, & 11

GRADE 4		GRADE 8		GRADE 11	
ITEM	MEAN SCORE	ITEM	MEAN SCORE	ITEM	MEAN SCORE
1. A24/2	41.7	D11/3	70.9	A10/2	76.0
2. C27/1	32.7	A17/4	71.3	D11/4	79.1
3. A25/3	33.0	D12/5	90.1	A11/6	93.8
4. A25/3	57.1	D12/5	90.1	C12/7	94.2

Indicator 5

P-Values of

Items Appearing in Grades 4, 8, & 11

GRADE 4		GRADE 8		GRADE 11	
ITEM	MEAN SCORE	ITEM	MEAN SCORE	ITEM	MEAN SCORE
1. D35/6	26.0	D35/7	48.3	C15/12	80.0
2. D37/5	21.9	D37/8	49.0	C17/14	83.2
3. A31/5	25.8	B39/15	62.7	C35/11	79.5
4. C28/8	27.6	A12/16	62.9	A21/13	81.7

Indicator 6

P-Values of

Items Appearing in Grades 4, 8, & 11

GRADE 4		GRADE 8		GRADE 11	
ITEM	MEAN SCORE	ITEM	MEAN SCORE	ITEM	MEAN SCORE
1. B16/9	71.1	B23/13	86.4	D15/9	92.1
2. B19/5	61.6	B26/10	82.4	D18/10	92.7
3. D12/3	55.5	D1/12	83.1	C1/11	93.8
4. B18/11	76.5	B25/14	90.4	D17/14	96.8
5. B17/8	69.9	B24/15	91.3	D16/15	97.1

Indicator 7

P-Values of

Items Appearing in Grades 4, 8, & 11

GRADE 4		GRADE 8		GRADE 11	
ITEM	MEAN SCORE	ITEM	MEAN SCORE	ITEM	MEAN SCORE
1. B36/1	14.2	D38/14	32.5	A45/18	59.5
2. C18/2	14.7	A18/16	36.5	D27/17	56.1
3. A34/4	24.9	A31/29	61.4	A27/29	88.3
4. B34/5	25.1	D25/27	53.5	A42/25	67.[illegible]